2012 destination Peel

Immigrant and Ethnocultural Health

Region of Peel
Working for you
Public Health

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introduction

The region of Peel is a diverse community whose ethnocultural makeup has been shaped over time by different waves of immigrants and their descendants. Almost half (49%) of Peel's population are immigrants, a much higher percentage than Ontario (28%) and Canada (20%).[A1] Within the Greater Toronto Area, Peel has the second highest proportion of immigrants – second to Toronto (50%), followed by York (43%), Halton (25%) and Durham (20%).

Recent immigrants arrive into Canada in better health than those who are Canadian-born.

When recent immigrants arrive in Canada, they are generally healthier than their Canadian-born counterparts. The longer immigrants are in Canada, however, the more their health declines to approach that of the native-born. This observation is called the "healthy immigrant effect."[1-6]

Given Peel's diversity, it is important to understand the ethnocultural dimensions of health and how cultural factors can impact health outcomes, health behaviours, as well as health-care access and use.

Definition

Culture **refers to the learned values, beliefs, norms and ways of life of an individual or a group that influence perceptions, decisions and actions in certain ways.[7] It is dynamic, evolves over time, and is transmitted down generations.**

Health and illness differ by biology, culture and other determinants of health and are affected by acculturation.

Biological differences

The biology of the human body plays a fundamental role in determining health status. It sets the basis for the body's ability to respond to a wide range of circumstances, such as coping with stress, fighting off disease, and adapting to the physical and social environment. A person's genetics plays a part in determining his/her lifespan, healthiness and likelihood of developing certain illnesses. In some circumstances, genetics appears to predispose certain individuals to particular diseases or health problems.

Some ethnic groups have a greater biological predisposition towards certain chronic diseases, such as heart disease and diabetes.[8-11] Differences in body mass index and adiposity by ethnicity are relevant examples that are described in Chapter 6 of this report.

Culturally perceived differences

The way in which health and illness are defined and understood varies between individuals, families, cultural groups and social classes. For example, in many non-industrialized societies, health is seen as a balanced relationship between people, society, nature and the supernatural world. When the relationship between any of these is disturbed, physical or emotional symptoms may occur. While the Western definition of health is not as all-encompassing, it does include physical, psychological and behavioural characteristics.[12]

Different cultures also have different perceptions on what causes illness, how illness presents itself, how to communicate pain and discomfort, as well as how to treat illness.[12]

Differences in other determinants of health

Although immigration and ethnicity are among the many factors that determine health, they do not exist in a vacuum. In fact, they interact with many other determinants of health (e.g., education, income, employment, physical environment, social connectedness, social support and/or social capital).

Definition

Determinants of Health

Good or poor health is determined in part by people's behaviours, the conditions into which they are born and in which they grow, work and age.[13] Factors such as access to and use of health services, while important, often have less of an impact on health status. At every stage of life, health is determined by complex interactions between genetic, social and economic factors; the physical and social environment; and individual behaviour. All of these factors are referred to as "determinants of health."

For more information about the determinants of health in Peel, please refer to *Health in Peel 2011 – Determinants and Disparities* available at: www.peelregion.ca/health/reports.

Effects of acculturation

Recent immigrants adapt to the new culture of their destination country and often adopt new values and behaviours as part of their resettlement – a process known as acculturation.

It is important for us to understand:

- why people immigrate;
- how people adapt to the new culture; and
- who lives in Peel and who immigrates to Peel.

Definition

Acculturation **has been defined as "a multidimensional process, resulting from intergroup contact, in which individuals whose primary learning has been in one culture take over characteristic ways of living (attitudes, values and behaviour) from another culture."[14] Acculturation reflects previous migration patterns.**

Acculturation can have positive or negative effects on an immigrant's health depending on how the health practices of the immigrant's country of origin compare to those of the destination country.[15-18] For example, immigrants may come from cultures with health practices that are more protective than they are in the country of destination. In this case, the adoption of health practices of the destination country may lead to deterioration in their health. Conversely, the destination country may provide better access to preventive services, such as disease screening programs.

Definition

Toronto Census Metropolitan Area (CMA)

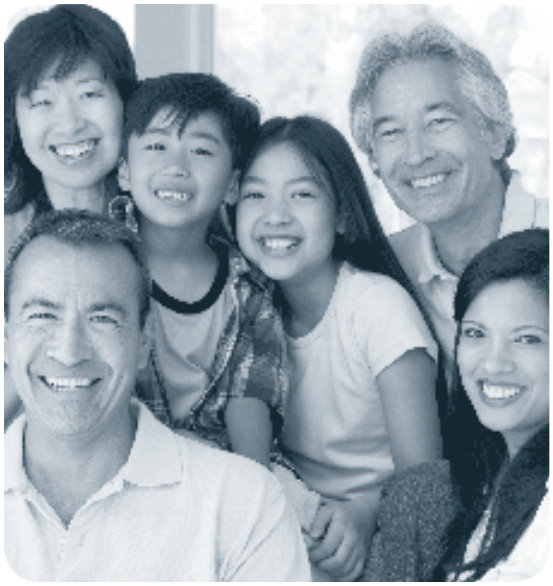
A CMA is a geographic area defined by Statistics Canada. It is an area consisting of one or more adjacent municipalities situated around a major urban core. The Toronto CMA stretches from Ajax in the east, Oakville in the west and Lake Simcoe to the north. Brampton, Caledon and Mississauga makeup a considerable portion of the Toronto CMA.

While approximately 84% of immigrants arriving to the Toronto Census Metropolitan Area (CMA) in 2000/2001 felt it was "important" or "very important" for them to carry on the values and traditions of their ethnic or cultural group or their homeland, 92% felt it was also important or very important for them to learn and practise the values and traditions of Canada.[C1]

Definition

Ethnicity **signifies a number of characteristics that a group may share in some combination. These characteristics include:**

- **geographic origin;**
- **migratory status;**
- **race;**
- **language and dialect;**
- **religious faith or faiths;**
- **ties that transcend kinship, neighbourhood and community boundaries;**
- **traditions, values and symbols;**
- **literature, folklore and music;**
- **food preferences;**
- **settlement and employment patterns;**
- **special interest with regards to politics in the homeland and in Canada;**
- **institutions that specifically serve and maintain the group;**
- **an internal sense of distinctiveness; and/or**
- **an external perception of distinctiveness.**[19]



Challenges in Studying Immigrant and Ethnocultural Health

There are limitations to reporting on the health status of a population from an ethnocultural perspective.

Many health data sets do not include information on ethnicity or immigrant status. For those that do include this information, the type and quality of data collected are inconsistent and/or there is no consideration of generational status. For example, while second- and third-generation Canadians are non-immigrants, they still have ethnocultural roots. They may experience stress and/or social exclusion if policies, resources, norms and values that directly or indirectly influence health favour non-visible minority groups. Most data sources do not collect data on generational status, which limits our ability to explore these relationships fully. For a definition of generational status, see Chapter 2.

Since culture is complex and not readily measured, immigrant status and ethnicity (and where relevant, world region of birth) are used as proxy measures throughout this report. The surveys we reference in this report use country of birth and length of time in Canada to define immigrant status. The measures used for ethnicity are based on either self-identified ethnic and/or cultural origins or self-identified cultural and racial background, depending on the data source. For more detailed information about how these concepts were measured, please refer to Chapter 11 – Data Sources and Limitations and Chapter 12 - Data Methods.

Differences among a subgroup's members (e.g., a particular cultural or ethnic group) may be just as marked as those between members of different cultural or ethnic groups. It is important to note that throughout this report we present data and associations at the population level, which may not be applicable in every circumstance at the individual level.

Purpose Of This Report

"Serving an Ethnoculturally Diverse Community" is one of the priorities in Peel Public Health's strategic plan, through which we aim to improve the health status of all ethnocultural groups in Peel.

Why is this a strategic priority for Peel Public Health?

Immigrants are an important part of our community, making up nearly half (49%) of Peel's population; a much higher percentage than for the rest of Ontario (28%) or Canada (20%).[A1] In addition, Peel has a widely varied ethnic mix.

Ethnicity and immigrant status have an important influence upon our health and health outcomes. Health status differs by immigrant status and ethnocultural identity due to cultural, social, biological and behavioural factors.[20, 21]

In this report, we describe the sociodemographic characteristics of Peel's residents; explore the relationships between immigrant status, ethnicity, and health; and describe health-care utilization patterns within our community. We will also identify:

- inequitable health outcomes;
- health risks and assets; and
- priority populations.

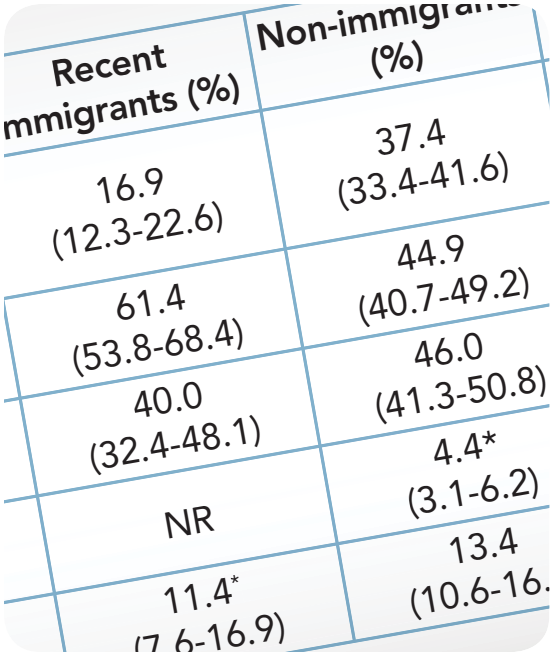
The intended audiences for this report are community partners serving immigrants and ethnoculturally diverse groups, health-care providers, students and educators, Region of Peel Councillors and Peel Public Health staff. The report is not intended to be used to profile groups within Peel's population in a negative way.

How To Read This Report

We attempt to illustrate our points throughout the report with local data. Sometimes, however, data for Peel are unavailable or the numbers are too small to be reliable. In these instances, we provide data for the Toronto Census Metropolitan Area, Ontario or Canada. In addition, for the purpose of comparison, we occasionally use provincial, national or international data.

Throughout the report, spatial data are primarily presented in maps by data zones. These data zones were developed for Peel Public Health using Census data for the purposes of mapping health status data. Each data zone is an aggregate of census tracts. Data zones do not cross municipal boundaries. Map 1 is a reference map of the data zones with major roadways highlighted.

The sources of data, methods of analysis and definitions for various terms used throughout this report are described in Chapters 11 – Data Sources and Limitations and 12 – Data Methods.



Report Content

This report has been produced in two formats: print and web. Both contain the same content. The web version of the report can be found at peelregion.ca/health/reports.

There are two types of references used in this report – text references and data references.

Text references refer to references from articles, books, etc., and are defined by a superscript number. For example, "Health status differs by immigrant status and ethnocultural identity due to…" [1, 2]

Data references refer to the source of the data for the statistics being presented in the text and are defined by a superscript letter. For example, "Immigrants are an important part of our community, making up nearly half (49%) of Peel's population..."[A1] In this example, the "A1" refers to the source of the data.

Throughout this report, there are boxes with symbols that highlight information of interest. The following is a list of all of the symbols used with their corresponding meaning.

about the region of Peel

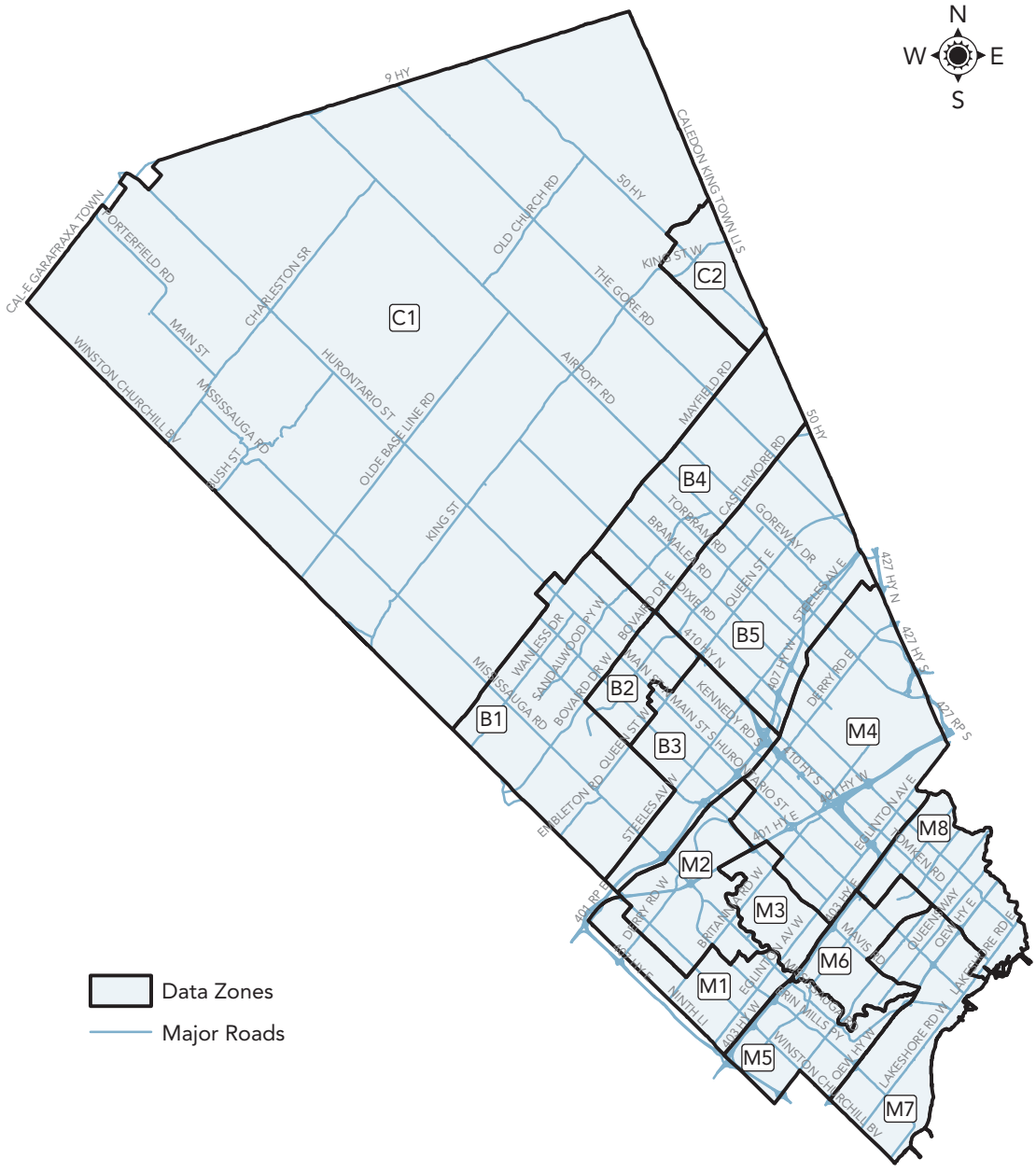
The region of Peel, located directly west of the city of Toronto and the region of York, includes the cities of Mississauga and Brampton, and the town of Caledon. At the time of the 2011 Census, 1,296,814 people lived in Peel, making it one of the largest municipalities in Canada and second largest in Ontario.[A2] Peel's population has grown rapidly; increasing by 12% between 2006 and 2011. By 2031, Peel's population is projected to exceed 1.6 million.[B]

Peel Facts

Facts about Peel's Population:

- Mississauga has the largest population of the three municipalities.[A2]
- 17% of families are headed by a lone parent.[A2]
- 59% of residents 25 years of age or older report some post-secondary education.[A1]
- 39% of residents 25 to 64 years of age who have post-secondary qualifications received them outside of Canada.[A1]
- The median after-tax income among residents 15 years and older is $25,157 in 2005 (similar to the median $24,604 in Ontario as a whole).[A1]
- 11% of people in private households live below the after-tax low-income cut-off in 2005 (same as Ontario).[A1]
- 49% of residents are immigrants.[A1]
- 10% of residents arrived in Canada in the past five years (recent immigrants.[A1]
- 18% of residents report East Indian as their ethnic origin (the most commonly reported ethnic origin).[A1]
- 50% of residents are visible minorities.[A1]
- 4% of residents have no knowledge of English or French.[A2]

Map 1
Peel Data Zones



Data zones are denoted by the first letter of the municipality, followed by a number (e.g., C1 denotes Caledon data zone 1).

Source: Developed for Peel Public Health by McMaster University, School of Geography and Earth Sciences, 2009.

chapter 1

MIGRATION AND THE HISTORY OF IMMIGRATION TO CANADA

Key Messages

- Immigration to Canada has varied over the last 150 years.
- The majority of immigrants to Canada, as classified by Citizenship and Immigration Canada (CIC), are "economic class".
- Immigration has a beneficial effect on population growth.
- Refugees are at risk for poor health outcomes relative to other recent immigrants to Canada.

Global Migration

As of 2010, there were an estimated 214 million international migrants worldwide – more than the population of the world's fifth largest country, Brazil.[23, 24] Women constitute almost half of all global migrants, and an increasing number are migrating independently.

Definition

Migrant (International) refers to a non-national who moves across an international border for one of several reasons; including settling, working, seeking protection, studying or visiting. Immigrants, refugees and temporary residents are all international migrants.

Immigrant refers to a non-national who moves into a country for the purpose of settling.[25]

Emigrant refers to one who emigrates. To emigrate is to leave one's place of residence or country to live elsewhere.

Refugee refers to a person who fears returning to his or her home country (for fear of persecution, cruel and unusual treatment, or punishment) and who seeks the protection of another country.[26]

Immigrants contribute in many ways to their new country. Some examples include:

- increasing cultural diversity and understanding, which can build confidence and linkages among nations;
- increasing the exchange of perspectives that affects social norms and class structures across a whole country; and
- contributing to the economic well-being of their destination country.[27]

For Canada, immigration also plays an important role in population growth. With an aging population and fertility rate below the level of population replacement, Canada needs immigration to sustain the labour force and economy.[28-30]

Immigrants contribute to economic growth in the destination countries, and also contribute to economic growth and poverty reduction when immigrants send money back to their countries of origin.[31] However, the loss of skilled workers from source countries and the implications from the movement of such workers is an issue of international debate.

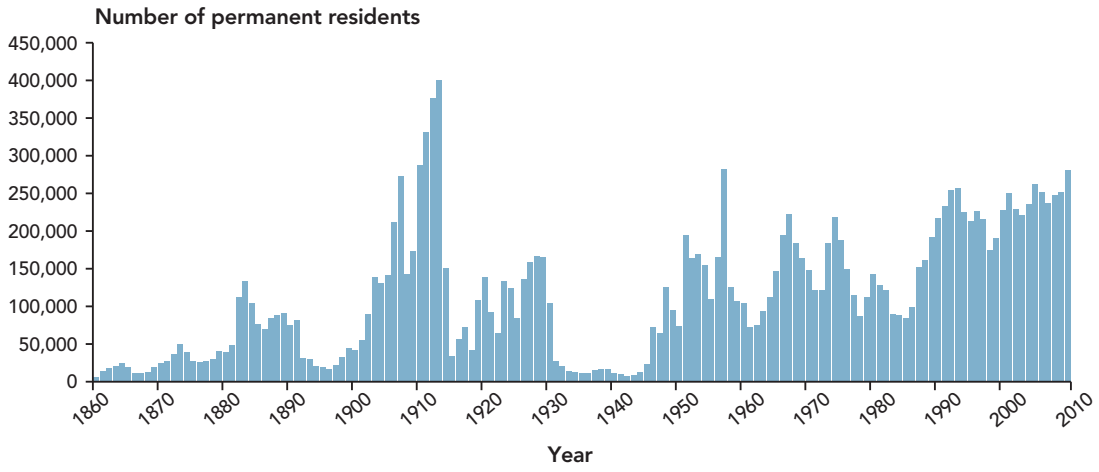
History of Immigration to Canada

Immigration to Canada has changed over the last 150 years from the number of people who settle in Canada each year to the different countries from which they arrive.

In 1971, the majority of immigrants were European-born. Currently the most common region of birth of immigrants to Canada is Asia.[34]

Figure 1.1 depicts the number of permanent residents who landed in Canada between 1860 and 2010. Corresponding historical highlights of immigration to Canada are outlined on pages 11 and 12.

Figure 1.1
Permanent Residents by Year, Canada, 1860 – 2010



Source: Citizenship and Immigration Canada. Canada Facts and Figures: Immigration Overview Permanent and Temporary Residents 2010 [Internet]. Minister of Public Works and Government Services Canada; 2011 [cited 2012 May 3]. Available from: http://www.cic.gc.ca/english/resources/publications/index.asp.

Historical highlights of immigration to Canada

Period One: 1867 –1913

- 1896 to 1905: The settlement of the West with an offer of free land results in large numbers of immigrants from the United Kingdom, Europe and the United States.
- 1906: Immigration Act* defined who was an immigrant and enabled the government to deport individuals and exclude immigrants of certain origins by requiring them to have a minimum amount of "landing money" upon entry to Canada.
- 1910: Immigration Act (major revisions to Act)* increased the government's ability to deport individuals and enact restrictive measures to exclude immigrants of certain origins.
- 1913: 400,000 immigrants arrive in Canada (an all-time peak), many of whom came with the intentions of farming.

Period Two: 1914 –1929

- 1914 to 1918: World War I – there is an immigration slump.
- 1919: Immigration Act* revised to include literacy test for all immigrants.
- 1928: Opening of Halifax's Pier 21, the Atlantic gateway to Canada.

Period Three: 1930s and 1940s

- 1930s: With the Canadian unemployment rate over 11% in 1931,

there was little to no economic need for immigrants, which ended active immigrant recruitment in Canada. As illustrated in Figure 1.1, levels of immigration during the Depression years were extremely low.

- 1940s: During and after World War II, approximately 48,000 war brides and their 22,000 children arrive in Canada.

Period Four: 1950s –1962

- 1950s: Approximately one and a half million Europeans immigrate to Canada.
- 1952: Immigration Act (major revisions to Act)* enables the government to refuse admission to Canada on the grounds of nationality, ethnic group, geographical area of origin, as well as a number of other factors presumed to result in a "probable inability to become readily assimilated".
- 1956 and 1957: Canada accepts 37,500 Hungarian refugees.

Period Five: 1962 –1973

- 1962: New immigration regulations are tabled to eliminate all discrimination based on race, religion and national origin.
- 1967: The government amends Canada's immigration policy and introduces the point system for the selection of skilled workers and business immigrants. Family class was still prioritized.
- 1968 and 1969: Canada takes in 11,000 Czechoslovakian refugees.
- 1972: Canada resettles more than 6,175 Asians expelled from Uganda.
- 1973: Canada accepts more than 6,000 Chileans.

Period Six: 1974 –1985

- 1975 to 1978: Canada resettles almost 9,000 Indochinese.
- 1978: Immigration Act (1976) came into effect April 10, 1978* and defined three priorities for Canada's immigration policy: reuniting family, admitting individuals for humanitarian reasons, as well as promoting Canada's economic, social, demographic and cultural goals.
- 1979 and 1980: 60,000 Vietnamese, Cambodian and Laotian "boat people" arrive in Canada.

Period Seven: 1986 –1993

- 1985: Report to Parliament on future immigration levels focuses on increasing economic component of immigration. Fertility in Canada had fallen below replacement levels since 1971, which increased the economic need for immigrants.
- Focus of immigration shifts from family class to economic class immigrants.

Period Eight: 1993 – present

- 1999: Canada accepts more than 7,000 Kosovar refugees.
- 2002: Immigration and Refugee Protection Act (IRPA) came into force June 28, 2002.
- 2008: Ministerial instructions changed the way the economic immigrant cases are processed under IRPA.
- 2008: The Canadian Experience Class (CEC) facilitates access to permanent resident status who have recent Canadian work experience or have graduated and recently worked in Canada.

*Note: Immigration Act is cited multiple times in the above list due to significant revisions in the Act having occurred in those years.

Adapted from: Citizenship and Immigration Canada, Canada Facts and Figures: Immigrant Overview Permanent and Temporary Residents, 2010.

Institute for Research on Public Policy, The Canadian Immigration System: An Overview.

Workshop on German and European Migration and Immigration Policy from a Transatlantic Perspective: Challenge for the 21st Century.

Did You Know

In the past 10 years, an average of 246,760 permanent residents settled in Canada each year. In 2010, a record 280,681 permanent residents were admitted to Canada, 118,116 of whom settled in Ontario.[35]

Immigration Process in Canada

To become a permanent resident in Canada, individuals are admitted under three main immigrant categories: economic class, family class and refugee class. Each immigrant category has different requirements that need to be met.[36]

Definition

Economic class immigrants are a class of permanent residents who are selected for immigration to Canada on the basis of their skills and potential to contribute to Canada's economy. Economic immigrants may include skilled workers, business immigrants, provincial or territorial nominees (those nominated by a province or territory for the specific skills and experience they can contribute to the local economy); live-in caregivers (temporary foreign workers who work in private households); and Canadian experience class (individuals who are granted permanent resident status on the basis of their Canadian experience).

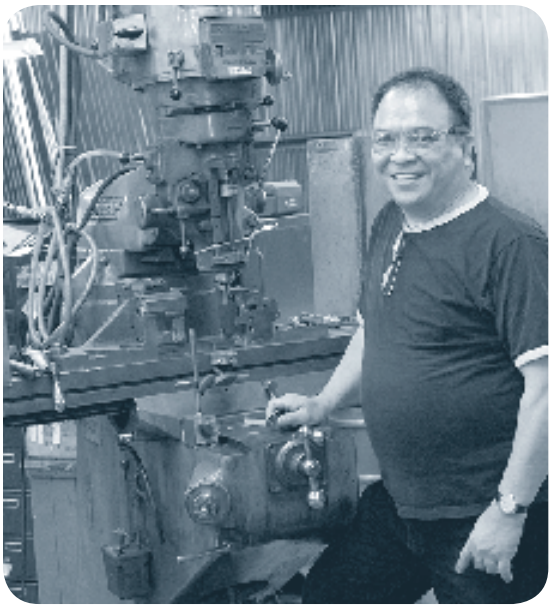
Family class immigrants are permanent residents who are sponsored by a Canadian citizen or permanent resident aged 18 years and older. Individuals in this class may be spouses and partners (common-law or conjugal partners) of permanent residents or citizens of Canada; parents or grandparents; and other dependants.

Refugees are a class of permanent residents in Canada that may include government-assisted refugees (i.e., those who are selected for resettlement in Canada under the Immigration and Refugee Protection Act and receive resettlement assistance from the Canadian government); refugees landed in Canada (i.e., "protected persons in Canada" who have their refugee claims accepted and have applied and been given permanent resident status); and refugee dependants (those who are family members of a refugee landed in Canada).[35]

The majority (88%) of immigrants come to Canada under the economic or family class categories. Over the past 25 years, there has been an increase in the number of permanent residents under the economic class, which makes it the most common type of immigrant category (Figure 1.2). In 2010, the largest proportion of economic immigrants and family class immigrants to Canada came from Asia and the Pacific, while the largest proportion of refugees arrived from Africa and the Middle East.[35]

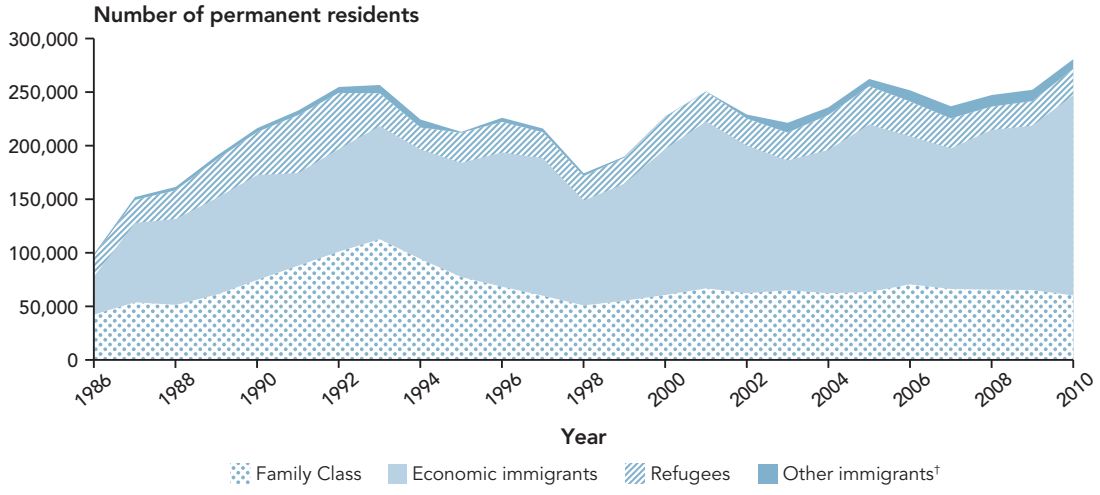
Definition

A ***permanent resident*** is a person who the Government of Canada has allowed to live permanently in Canada, and who may later apply to become a Canadian citizen.



Most immigrants come to Canada under the economic and family class categories.

Figure 1.2
Permanent Residents by Category and Year, Canada, 1986–2010



† Other immigrants include immigrants who do not qualify in any of these categories. On an exceptional basis, the Immigration and Refugee Protection Act gives Citizenship and Immigration Canada the authority to grant permanent resident status to individuals who would not otherwise qualify in any category – for example, in cases where there are strong humanitarian and compassionate considerations.
Source: Citizenship and Immigration Canada. Canada Facts and Figures: Immigration Overview Permanent and Temporary Residents 2010 [Internet]. Minister of Public Works and Government Services Canada; 2011 [cited 2012 May 3].
Available from: http://www.cic.gc.ca/english/resources/publications/index.asp.

Did You Know

Individuals applying for immigration to Canada through the economic class are considered based on six selection factors and assessed through a point system. Applicants need a total of 67 points to be considered for permanent residency in Canada.

The following chart outlines how points are currently allocated:[36]

Selection Factor	*Points allocation*
Education	25
Proficiency in English and/or French	24
Work experience	21
Arranged employment in Canada	10
Adaptability	10
Age	10
Total	100
Pass Mark	67

The Government of Canada's Economic Action Plan 2012, highlights several initiatives to strengthen the immigration system and make it truly proactive, targeted, fast and efficient in a way that will sustain Canada's economic growth and deliver prosperity for the future. This includes a reform to the points system used for the assessment of applicants whereby it would be revised to reflect the importance of younger immigrants with better language skills.[37]

For additional information, visit Citizenship and Immigration Canada's website at: cic.gc.ca.

Immigrant Medical Examination (IME) and Medical Surveillance

Everyone who seeks permanent residency in Canada must complete an immigration medical examination (IME) as part of their application. An IME is completed by a designated medical practitioner and is valid for one year. The IME may include:

- a review of the applicant's medical history,
- a physical examination,
- laboratory and other medical tests,
- an assessment for Tuberculosis (TB) and screening for Human Immunodeficiency Virus (HIV) and syphilis.[38]

Individuals diagnosed with a significant and active communicable disease are denied entry to Canada until they receive appropriate treatment. Those who have a history of TB infection and/or a history of syphilis are allowed to enter Canada, but are placed on medical surveillance.

Citizenship and Immigration Canada (CIC) through the provincial health authorities, notifies the public health unit of residents placed on medical surveillance. Persons on medical surveillance are instructed to report to a local public health authority within 30 days of arrival in Canada.

Definition

Medical Inadmissibility

A person can be denied admission to Canada for a medical condition if:

- **The health condition is likely to present a danger to the public's health or safety.**
- **The condition is likely to cause excessive demand on Canada's health and/or social services.[39]**

For more information, visit: cic.gc.ca/english/resources/manuals/op/op15-eng.pdf.

In certain circumstances, an individual who does not meet the Canadian medical requirements may be granted a Temporary Resident Permit to enter Canada.[39]

Individuals who are otherwise qualified to immigrate to Canada may have their application refused if they or any of their dependants are found to be medically or criminally inadmissible.

Did You Know

Medical Surveillance

The purpose of medical surveillance is to provide immigrants to Canada with appropriate medical follow-up to rule out active disease and to determine requirements for ongoing medical follow-up.

Refugees

Canada generally accepts over 25,000 refugees each year.[40] This represents approximately 10% to 12% of Canada's annual immigration.[41]

These individuals apply for refugee status through Canada's refugee protection

system, which has two main components:

- the Refugee and Humanitarian Resettlement Program for people seeking protection from outside Canada, and
- an In-Canada Refugee Claimant Process for persons making refugee protection claims from within Canada.

While the total number of new permanent residents in Canada increased between 2005 and 2010, the proportion of refugees decreased from 14% to 9% during the same period.[41] The Balanced Refugee Reform Act includes a plan to resettle up to 2,500 additional refugees per year over the next two to three years.[42]

Definition

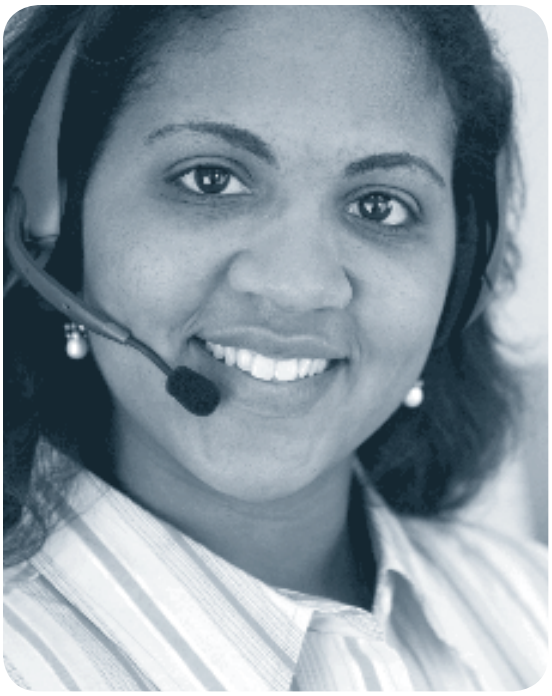
Convention Refugee

According to the Geneva Convention, a refugee is a person who is forced to flee from his or her home country or the country where the person normally resides because of a well-founded fear of persecution based on race, gender, sexual orientation, religion, nationality or political opinion. This definition, used in Canadian law, is widely accepted internationally.[43]

Person in Need of Protection

A person in Canada whose removal to their country of nationality or former habitual residence would subject them to the possibility of torture, risk to life, or risk of cruel and unusual treatment or punishment.[44]

The Immigration Refugee Board determines if an applicant qualifies to be a convention refugee or a person in need of protection.[44]



CIC funds several programs that support the resettlement of refugees including Language Instruction for Newcomers to Canada (LINC), financial and settlement assistance and provision of health care.

Did You Know

In 1993, Canada became the first country to formally acknowledge that women can be persecuted because of their gender.[45]

Refugees are at risk for poor health outcomes relative to other recent immigrants in Canada.

Refugees, more than any other category of immigrant, are more likely to have experienced harmful living conditions, trauma and violence, all of which can negatively impact their health. The degree to which their health is impacted varies depending on:

- their living conditions;

- their social status before they arrived;
- the traumas they may have experienced as a result of war or other violence;
- the length of time they lived in refugee camps;
- the diseases to which they may have been exposed; and
- the access they had to preventative health services before and after immigration.[46]

Even four years after arriving in Canada, refugees are more likely to report poorer health status compared to other categories of immigrants. They often experience a rapid decline in self-reported health after arrival and have been identified as vulnerable to a variety of poor health outcomes and likely to experience barriers to health services.[46]

Eligibility for Health-Care Coverage

Health-care coverage varies for immigrants across Canada. Table 1.1 provides a summary of health-care coverage available for permanent residents, temporary residents and refugees in Ontario.

Did You Know

Recent Canadian clinical guidelines have been developed for primary health-care providers who work with immigrants and refugees with special attention to the unique needs of refugees.[46] Examples of topics addressed by these guidelines include infectious diseases, mental health and maltreatment, chronic and non-communicable disease, and selected women's health issues. The guidelines are available at: cmaj.ca/cgi/collection/canadian_guidelines_for_immigrant_health.

Table 1.1
Eligibility for Health-Care Coverage by Immigration Status, Ontario

Immigration Status	Eligible for Health-Care Coverage
Permanent resident	Yes. Eligible for full Ontario Health Insurance Plan (OHIP) three months after becoming a resident in Canada.
Temporary resident permit holder	No.
Protected persons (i.e., convention refugees/persons who need protection)	Yes. Eligible for full OHIP after the application is in process.
Refugee claimant/person in need of protection claimant	No. Eligible for Interim Federal Health Program (IFHP) until claim is decided. The IFHP provides temporary limited health insurance to refugees, protected persons and refugee claimants, as well as to their dependants, in Canada who are not yet covered by a provincial or territorial health insurance plan.

chapter 2

IMMIGRANT AND ETHNOCULTURAL PROFILE OF PEEL

Key Messages

- Ten per cent of Peel residents are recent immigrants and 38% are long-term immigrants. This translates to approximately 118,000 recent immigrants and 443,000 long-term immigrants for a total of over 561,000 immigrants.[A1]
- Peel has a diverse population. Currently the majority of recent immigrants in Peel come from Asia and the Middle East.[A3] Historically, more immigrants arrived from Europe. This shift in place of origin may impact the delivery of programs.
- The age distribution of Peel's population differs by immigrant status. Peel's recent immigrant population is made up of a larger proportion of young adults aged 25 to 44 years.[A3]
- Almost one in 10 recent immigrants (9%) in Peel does not speak English or French. This proportion is higher among immigrant seniors of whom 15,735 (22%) have no knowledge of English or French.[A3]
- Recent immigrants in Peel are highly educated, but their unemployment rate is higher than that of long-term immigrants and non-immigrants.
- In Peel, recent immigrants have lower income than long-term immigrants and non-immigrants.[A3] However, how long this income difference lasts is unknown.

Knowledge about the sociodemographic profile of Peel's immigrants, as well as other aspects of its ethnocultural composition, is essential in helping to better understand the health status needs of immigrants in Peel. Much of the data presented are based on the 2006 Census, as not all of the 2011 Census data were available at the time of writing this report. The loss of the mandatory Census may impact the amount and quality of available data about all Canadians, including immigrants.

Definition

In this section of the report, the term ***immigrant*** refers to people who are, or have been, granted the right to live in Canada permanently by immigration authorities. Some immigrants have resided in Canada for a number of years, while others are recent arrivals.

Recent immigrant refers to those who immigrated to Canada between 2001 and 2006 (i.e., within five years of the 2006 Census).

Long-term immigrants are those who immigrated to Canada prior to 2001.

Non-immigrant refers to the Canadian-born population.

Ten per cent of Peel residents are recent immigrants and 38% are long-term immigrants. This translates to a total of 561,240 immigrants (118,220 recent and 443,025 long-term immigrants).

With immigrants making up nearly half of our population in 2006, Peel has a considerably larger proportion of immigrants (almost 49%) than Ontario (28%) and Canada (20%). This distinction will most likely continue to grow as the proportion of recent immigrants (10%) within the Peel population is double the proportion for Ontario as a whole.[A1]

In 2006, within Peel, Mississauga had the highest proportion of immigrants (52%), followed by Brampton (48%) and Caledon (21%).[A1]

Table 2.1
Proportion of Population by Immigrant Status and Municipality, Peel and Peel Municipalities, 2006

Immigrant Status	Peel		Mississauga		Brampton		Caledon	
Non-immigrants	581,880	50.4	314,965	47.3	222,080	51.5	44,830	78.9
Non-permanent residents	10,950	0.9	7,440	1.1	3,305	0.8	200	0.4
Immigrants	561,240	48.6	343,245	51.6	206,190	47.8	11,805	20.8
Total population	**1,154,070**	**100.0**	**665,655**	**100.0**	**431,575**	**100.0**	**56,840**	**100.0**

Source: Custom Profile Data, 2006 Cesnsus, Statistics Canada.

Age and Sex

Historically, the largest proportion of immigrants to Canada arrived as young adults.[47] While this has remained true over the years, there have been more female immigrants over the past century to Canada. Females now represent slightly over half of our immigrant population.[48]

The immigration process tends to favour people who are younger, better educated and, in turn, healthier. In Peel, the majority of long-term immigrants (91%) and recent immigrants (84%) were under the age of 45 years when they immigrated to Canada.[A3]

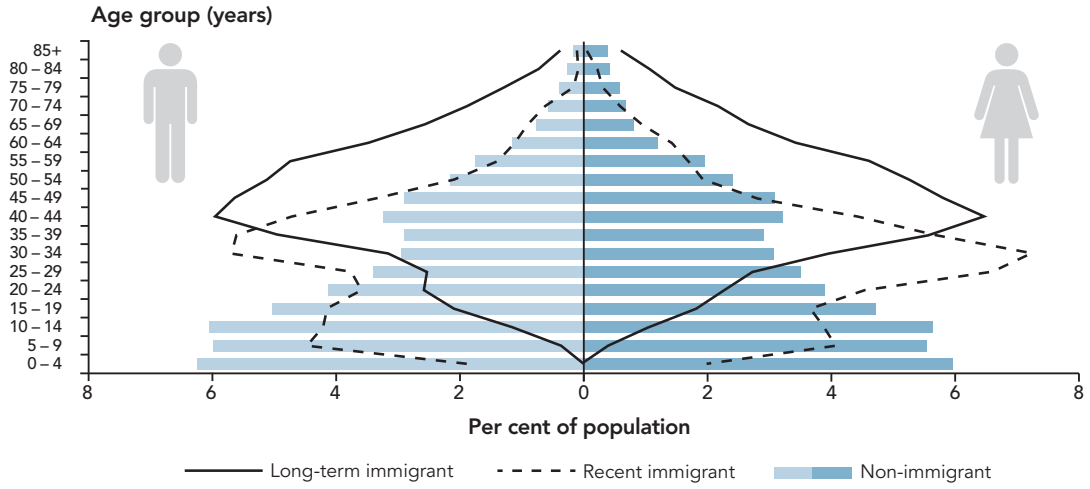
Peel's recent immigrant population is made up of a larger proportion of young adults aged 25 to 44 years compared to long-term immigrants and non-immigrants, as shown in Figure 2.1.

Conversely, Peel's long-term immigrant population tends to be older (40 years and older) than the recent- and non-immigrant population.[A3]

The proportion of young children is highest among the non-immigrant population and lowest among the long-term immigrant population.[A3] Given that by definition a long-term immigrant arrived in Canada before 2001, we would expect most young children to be Canadian-born or recent immigrants.

While the majority of Peel's children are Canadian-born, two-thirds of births in Peel are to immigrant women. In addition, approximately two-thirds of Peel parents who have children aged one to 18 years are immigrants compared to 37% of Ontario parents.[A3]

Figure 2.1
Population Distribution by Immigration Status and Age Group, Peel, 2006



Note: By definition, a long-term immigrant arrived in Canada prior to 2001. This explains why the proportion of 0 to 4 year-olds who are long-term immigrants is 0%.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

Marital Status

Married people live longer than single people.[49] Ontario residents aged 25 to 64 years who are married are more likely to report excellent, very good or good self-rated health than those who are widowed, separated, divorced or single (data not shown).[D1] In Peel, recent immigrants have the highest proportion of married people (69%), closely followed by long-term immigrants (65%). Non-immigrants have a higher proportion of people who are single, that is, never married (46%) (Table 2.2).

Table 2.2
Marital Status by Immigrant Status, Peel, 2006

Marital Status	Recent immigrants (%)	Long-term immigrants (%)	Non-immigrants (%)
Single, never married	22.5	18.1	46.1
Married	69.1	64.5	34.9
Common Law	1.5	3.2	6.7
Separated	1.8	3.2	3.0
Divorced	2.1	5.5	6.2
Widowed	3.1	5.4	3.1
Total Population 15 years and over	**100.0**	**100.0**	**100.0**

Source: Custom Profile Data, 2006 Census, Statistics Canada.

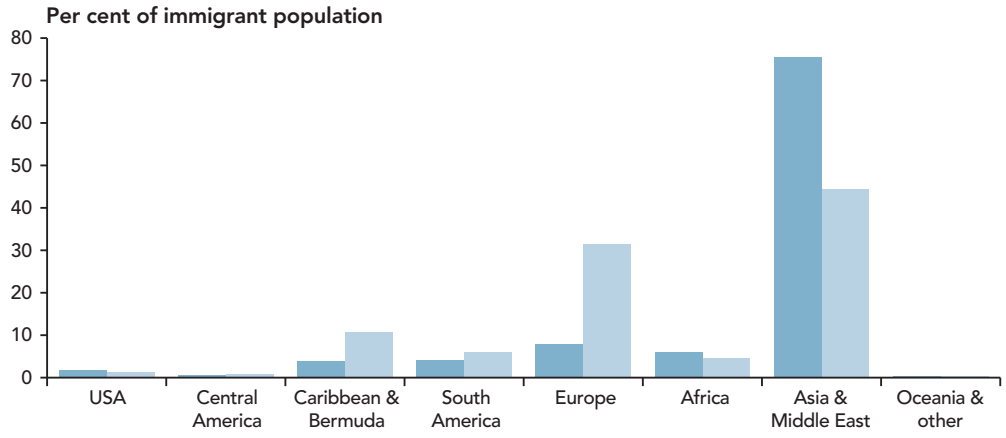
Ethnocultural Diversity and Immigration

Region/Country of Origin

The region or country of origin of immigrants to Canada has changed over time. As shown in Figure 2.2, a higher proportion of recent immigrants were born in Asia and the Middle East. In fact, more than half (51%) of Peel's immigrant population was born in Asia and the Middle East, which includes Eastern Asia (including China, Hong Kong), Southeast Asia (including the Philippines), South Asia (including India) and the Middle East. European-born immigrants still comprise a large portion of Peel's immigrant population (27%); however, they make up a smaller proportion of recent immigrants (8%).[A3]

Figure 2.2

World Region/Country of Birth by Immigrant Status, Peel, 2006



	USA	Central America	Caribbean & Bermuda	South America	Europe	Africa	Asia & Middle East	Oceania & other
Recent immigrant	1.8	0.5	3.9	4.2	7.9	6.0	75.4	0.3
Long-Term immigrant	1.2	0.9	10.8	6.1	31.5	4.5	44.5	0.4

Source: Custom Profile Data, 2006 Census, Statistics Canada.

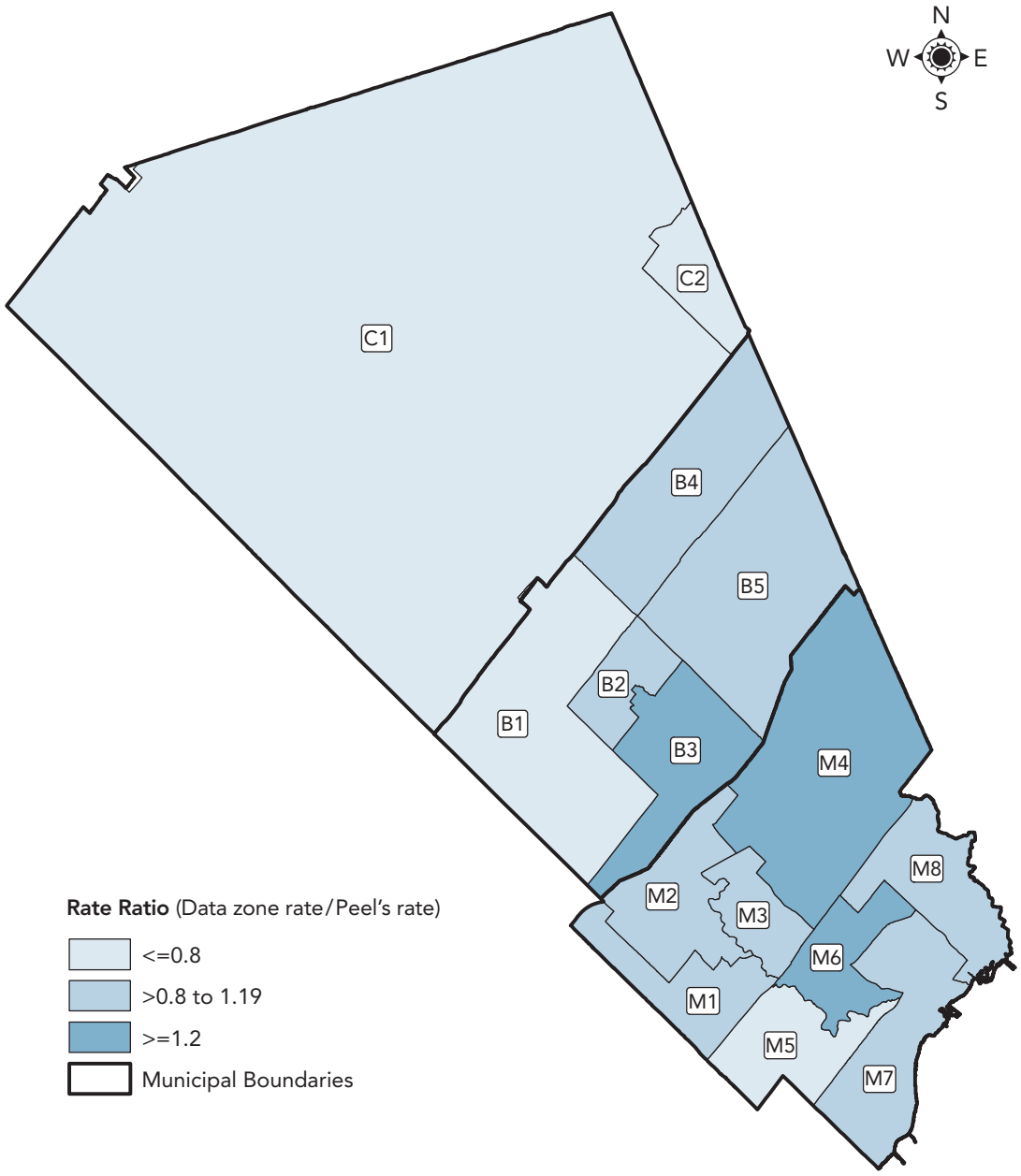
Definition

A *rate ratio* is the result of the comparison of one rate to another rate. For example, if the proportion of recent immigrants was 12.8 per 100 population (or 12.8%) in data zone B3 and 10.2 per 100 (or 10.2%) in Peel, the rate ratio would be calculated as 12.8 / 10.2 = 1.25. In this example, the prevalence of recent immigrants in data zone B3 is 25% above that of the Peel rate. A rate ratio of 1 indicates no difference between rates.

Caledon has the lowest proportion of recent immigrants (arrived within the past five years) in Peel (Map 2.1). There are three areas within Peel where the proportion of recent immigrants is 20% or more higher than that for the region as a whole. These areas are Brampton's data zone B3 and Mississauga's data zones M4 and M6. The proportion of recent immigrants and the difference between the rate for each zone compared to the rate for Peel as a whole (known as the rate ratio) is reflected in Table 2.3.

For newcomers in the Toronto CMA (which includes Peel), living near family members or friends was their first consideration when choosing where to live. The presence of an established ethnic community is also among their top reasons for choosing a specific city or area to live.[50]

Map 2.1
Rate Ratio† of Recent Immigrants by Data Zone, Peel, 2006



†Rate ratio calculated as the rate of the data zone divided by the Peel rate which is 8.8%.

Data zones are denoted by the first letter of the municipality, followed by a number (e.g., C1 denotes Caledon data zone 1).

Source: Custom Profile Data, 2006 Census, Statistics Canada.

Table 2.3
Per Cent of Immigrants, Recent Immigrants, and Long-Term Immigrants, Peel, Peel Municipalities, Peel Data Zones and Ontario, 2006

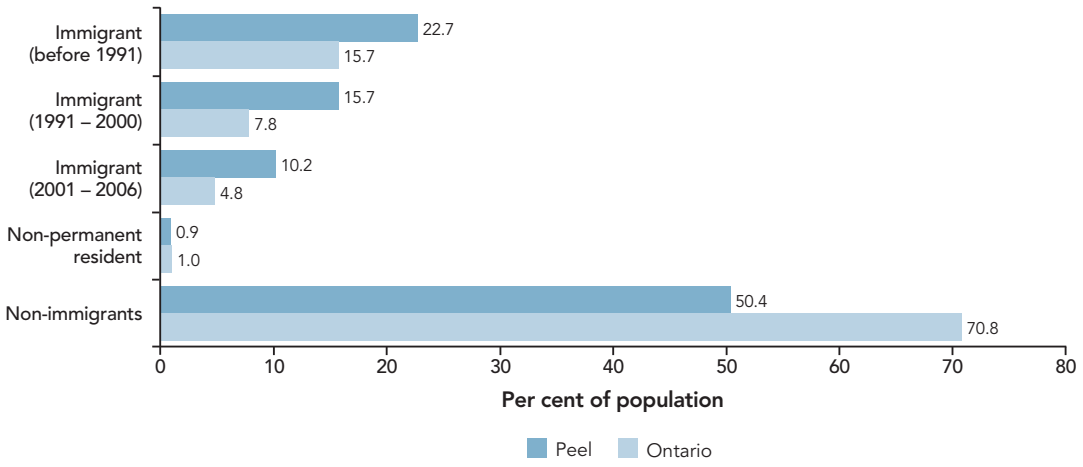
Data Zone	Per cent of Immigrants	Per cent of Recent Immigrants	Rate Ratio of Recent Immigrants†	Per cent of Long-term Immigrants†
Caledon	**20.8**	**0.9**	**0.1** (90% lower than the rate for Peel as a whole)	**1.9**
C1	21.3	0.9	0.1	2.0
C2	19.9	1.0	0.1	1.8
Brampton	**47.8**	**9.9**	**1.0** (the same as the rate for Peel as a whole)	**17.9**
B1	43.4	7.1	0.7	14.1
B2	43.3	8.3	0.8	15.2
B3	49.6	12.8	1.2	20.8
B4	56.2	10.7	1.0	21.1
B5	47.3	10.6	1.0	18.5
Mississauga	**51.6**	**11.2**	**1.1** (10% higher than the rate for Peel as a whole)	**20.2**
M1	52.9	11.1	1.1	22.6
M2	40.5	8.4	0.8	15.8
M3	60.3	11.0	1.1	23.5
M4	61.4	14.5	1.4	24.7
M5	42.6	7.5	0.7	14.3
M6	58.5	14.7	1.4	24.5
M7	43.7	10.1	1.0	16.8
M8	51.1	10.9	1.1	18.3
Peel	**48.6**	**10.2**	**1.0**	**18.5**
Ontario	**28.3**	**4.8**	**0.5** (50% lower than the rate for Peel as a whole)	**8.7**

† Data zone or Ontario rate/Peel rate.
Source: 2006 Census, Statistics Canada.

Period of Immigration

Ten per cent of Peel's residents arrived in Canada within the five years leading up to the 2006 census. This is double the proportion for Ontario as a whole. Just over half (53%) of the immigrants residing in Peel region arrived between 1991 and 2006 (Figure 2.3).

Figure 2.3
Period of Immigration, Peel and Ontario, 2006



Source: 2006 Census, Statistics Canada.

A notable difference in the period of immigration is observed by municipality (Table 2.4). The majority of immigrants living in Caledon (70%) settled in Canada in 1980 or earlier. In comparison, most immigrants living in Mississauga (72%) and Brampton (73%) settled in Canada after 1980.

Table 2.4
Per Cent of Immigrants by Time Period of Immigration, Peel and Peel Municipalities, 2006

Time Period	Peel %	Mississauga %	Brampton %	Caledon %
Before 1961	5.5	5.6	4.3	23.6
1961-1970	8.8	8.9	7.5	26.6
1971-1980	14.1	13.4	14.9	19.5
1981-1990	18.3	18.0	19.2	13.0
1991-2000	32.3	32.3	33.3	12.8
2001-2006	21.1	21.8	20.8	4.4
Total Immigrants	**100.0**	**100.0**	**100.0**	**100.0**

Source: 2006 Census, Statistics Canada.

Definition

Definitions of first generation, second generation and third generation Canadians vary. The following definitions are used throughout this report.

First generation Canadian refers to temporary or permanent residents who are born outside of the country. For the most part, these are people who are now, or have ever been, landed immigrants in Canada. Also included in the first generation are a small number of people born outside Canada to parents who are Canadian citizens by birth.

Second generation Canadian refers to persons born inside Canada with at least one parent born outside Canada (these persons may have grandparents born inside or outside Canada).

Third generation or more refers to persons born inside Canada with both parents born inside Canada (these persons may have grandparents born inside or outside Canada).[51]

For more information, visit the 2006 Census Dictionary at: www12.statcan.gc.ca/census-recensement/2006/ref/dict/index-eng.cfm.

Peel has a substantially higher proportion of residents identifying as first generation Canadians (59%) compared to Ontario as a whole (34%). Within Peel, the majority of residents living in Mississauga (61%) and Brampton (60%) were of first generation status compared to Caledon (27%) (Table 2.5).

Table 2.5
Generation Status of Residents†, Peel Municipalities, Peel and Ontario, 2006

	Generation Status		
Geography	1st (%)	2nd (%)	3rd or more (%)
Mississauga	61.0	20.1	18.9
Brampton	59.5	19.7	20.8
Caledon	26.6	32.6	40.7
Peel	58.8	20.5	20.7
Ontario	34.0	19.5	46.5

† Reflects population aged 15 years and older.
Source: 2006 Census, Statistics Canada.

Ethnic Origin and Ethnicity

In addition to a high percentage of immigrants, Peel's population is ethnoculturally diverse. Health outcomes differ among members of different ethnocultural groups in part due to genetics (e.g., predisposition to certain diseases, such as diabetes), as well as cultural differences in beliefs (e.g., sex differences in the use of alcohol

or tobacco) and behaviours (e.g., vitamin or mineral deficient diets and/or food safety practices).

A notable shift over time in the ethnic origin of residents in Peel from European ethnicity to South Asian ethnicity is evident.

A comparison of ethnicity by immigrant status is shown in Table 2.6. Non-immigrants are more likely to report European ethnicity, while immigrants are most likely to report Eastern Asian and South Asian ethnicities.

Definition

Ethnicity **in the 2006 Census refers to the ethnic or cultural origins of a person's ancestors. An ancestor is someone usually more distant than a grandparent.[52]**

Table 2.6
Top 10 Ethnic Origins† by Immigrant Status, Peel, 2006

	Recent immigrant		Long-term immigrant		Non-immigrant	
Rank	Ethnic origin	(%)	Ethnic origin	(%)	Ethnic origin	(%)
1	East Indian	40.4	East Indian	23.6	Canadian	23.2
2	Pakistani	9.3	Chinese	8.6	English	22.9
3	Chinese	8.2	Polish	6.3	Scottish	16.3
4	Filipino	7.2	Portuguese	6.3	Irish	15.8
5	South Asian, n.i.e.‡	3.7	Jamaican	5.6	Italian	11.7
6	Punjabi	3.1	Italian	5.4	East Indian	9.9
7	Spanish	2.4	Filipino	5.3	French	7.7
8	Jamaican	2.0	English	4.9	German	7.0
9	Korean	1.8	Pakistani	3.1	Portuguese	5.1
10	Polish	1.7	Scottish	2.7	Polish	4.4

† Includes single and multiple responses.
‡ n.i.e - not included elsewhere.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

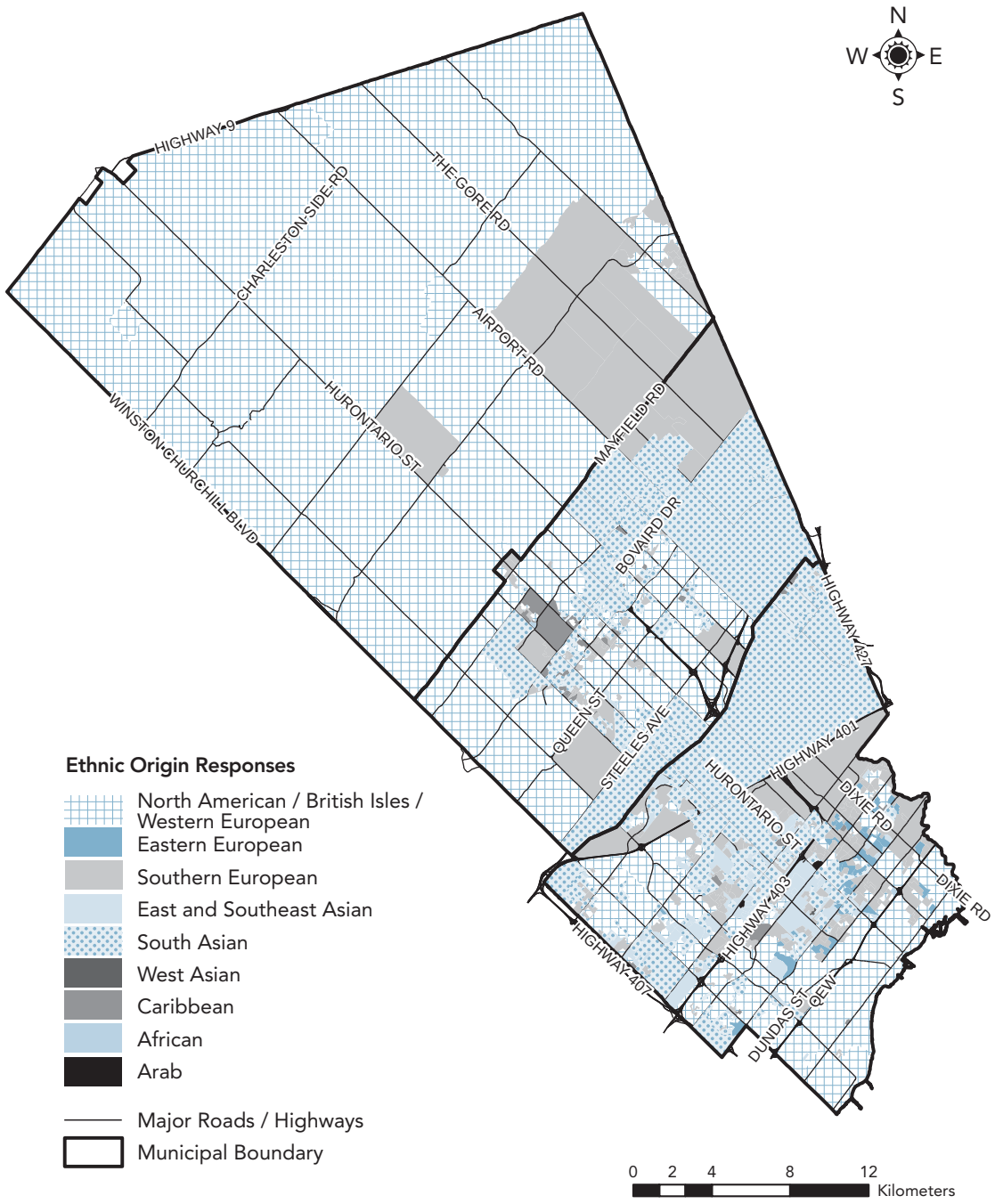
Map 2.2 shows, for dissemination areas within Peel, the dominant ethnic origin identified by residents.

Definition

Dissemination Area **refers to a small, relatively stable geographic unit composed of one or more adjacent dissemination blocks. It is the smallest standard geographic area for which all census data are disseminated.[52]**

Map 2.2

Dominant Ethnic Origins by Dissemination Areas, Peel, 2006



Note: Statistical significance based on 95% confidence intervals.

Source: 2006 Census, Statistics Canada.
Projection: NAD 1983 UTM Zone 17N.

Visible Minorities

Definition

The Employment Equity Act defines *visible minorities* as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour."[52]

In some Ontario jurisdictions, such as Peel, the visible minority population has become or is close to becoming the largest proportion of the population; consequently this description is no longer accurate in these populations.

Overall, 50% of Peel's population reported themselves to be members of a visible minority. This proportion is much higher than that of the province as a whole (23%).[A1] The majority of recent immigrants (90%) in Peel identified as members of a visible minority, compared to 66% of long-term immigrants and 29% of non-immigrants.[A3] Table 2.7 shows a breakdown of visible minority categories of Peel residents by immigrant status.

Table 2.7
Visible Minority Categories of Residents by Immigrant Status, Peel, 2006

Visible Minority Categories	Recent immigrants (%)	Long-term immigrants (%)	Non-immigrants (%)
Not a visible minority	10.4	34.1	70.7
Total visible minority population	89.6	65.9	29.3
• Chinese	6.5	7.2	2.4
• South Asian	55.1	30.0	12.3
• Black	6.3	10.3	7.1
• Filipino	7.1	5.2	1.8
• Latin American	2.9	2.7	0.9
• Southeast Asian	1.8	2.7	1.1
• Arab	4.2	2.3	0.7
• West Asian	1.7	1.2	0.3
• Korean	1.7	0.8	0.2
• Japanese	0.2	0.1	0.4
• Visible minority, n.i.e.†	0.9	2.0	0.9
• Multiple visible minority	1.3	1.5	1.2

† n.i.e. = visible minority, not included elsewhere.
Note: multiple response - categories may not add up to 100%.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

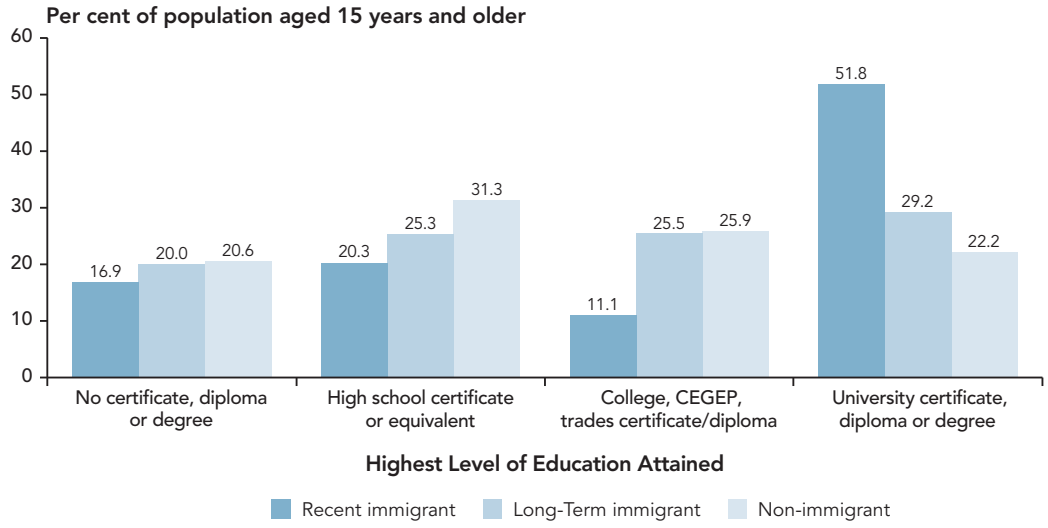
Education and Language

Education

Immigrants are a highly educated segment of Peel's population.

Recent immigrants to Canada are among the most educated in our region. Regardless of ethnicity, a greater proportion of recent immigrants (52%) have a university education compared to non-immigrants (22%) in Peel (Figure 2.4).

Figure 2.4
Highest Level of Education Attained† by Immigrant Status, Peel, 2006



† Based on population aged 15 years and older.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

Despite having adequate education, not being fluent in English is a barrier to obtaining well-paid jobs and permanent employment. In fact, language ability has been found to be a most critical factor in finding long-term work among skilled immigrants.[53] Language barriers have also been identified by immigrants as an obstacle in obtaining training in Canada.[54] In Peel, about 9% of recent immigrants and 5% of long-term immigrants have no knowledge of either English or French.[A3]

Peel Facts

Language barriers are associated with poverty, unemployment and low levels of health literacy. They also limit access to health information and care for individuals and their families.

In addition to helping immigrants find adequate employment and income, knowledge of English is important for making healthy lifestyle choices, finding and understanding health and safety information, and locating proper health services. While immigrants are an educated group of Peel's population, language barriers may put immigrants, particularly recent immigrants, at risk for poor health.

Home Language

Home language refers to the language spoken most often or on a regular basis at home by the individual at the time of the census. English and Punjabi are the top two home languages for Peel residents regardless of their immigration status (Table 2.8).

Table 2.8
Top 10 Home Languages by Immigrant Status, Peel, 2006

	Recent immigrants		Long-term immigrants		Non-immigrants	
Rank	Language	(%)	Language	(%)	Language	(%)
1	English	31.8	English	54.8	English	90.7
2	Panjabi (Punjabi)	16.3	Panjabi (Punjabi)	9.6	Panjabi (Punjabi)	3.0
3	Urdu	10.1	Chinese	5.3	Urdu	0.9
4	Chinese	5.8	Polish	4.2	Chinese	0.7
5	Tagalog (Pilipino, Filipino)	3.7	Urdu	3.1	French	0.6
6	Gujarati	3.7	Portuguese	2.6	Polish	0.6
7	Hindi	3.5	Tagalog (Pilipino, Filipino)	2.1	Tamil	0.4
8	Arabic	3.4	Spanish	2.0	Spanish	0.4
9	Spanish	3.0	Vietnamese	1.9	Vietnamese	0.4
10	Tamil	1.9	Italian	1.8	Portuguese	0.3

Source: Custom Profile Data, 2006. Census, Statistics Canada.

Knowledge of Official Language

In 2011, 4% of Peel residents had no knowledge of English or French.[A2] A larger proportion of recent immigrants have no knowledge of either of the official languages compared to long-term immigrants and non-immigrants (Table 2.9).

Three areas in Peel (data zones B1 and B4 in Brampton and C2 in Caledon) have

a higher proportion (20% higher or more compared to Peel) of recent immigrants who have no knowledge of English or French (shown in Map 2.3).

Almost one in 10 recent immigrants (9%) and one in 20 long-term immigrants (5%) have no knowledge of English or French.

Table 2.9
Knowledge of Official Language by Immigrant Status, Peel, 2006

	Recent immigrant (%)	Long-term immigrant (%)	Non-immigrant (%)
English only	86.8	89.9	89.7
French only	0.2	0.1	0.1
English and French	4.2	4.7	8.8
Neither English nor French	8.8	5.3	1.4
	100.0	**100.0**	**100.0**

Source: Custom Profile Data, 2006 Census, Statistics Canada.

Although most immigrant seniors in Peel have a working knowledge of English, more than 22% (15,735 immigrant seniors) have no knowledge of English or French. In Brampton, this proportion is higher (25%) compared to the other two area municipalities (Table 2.10).

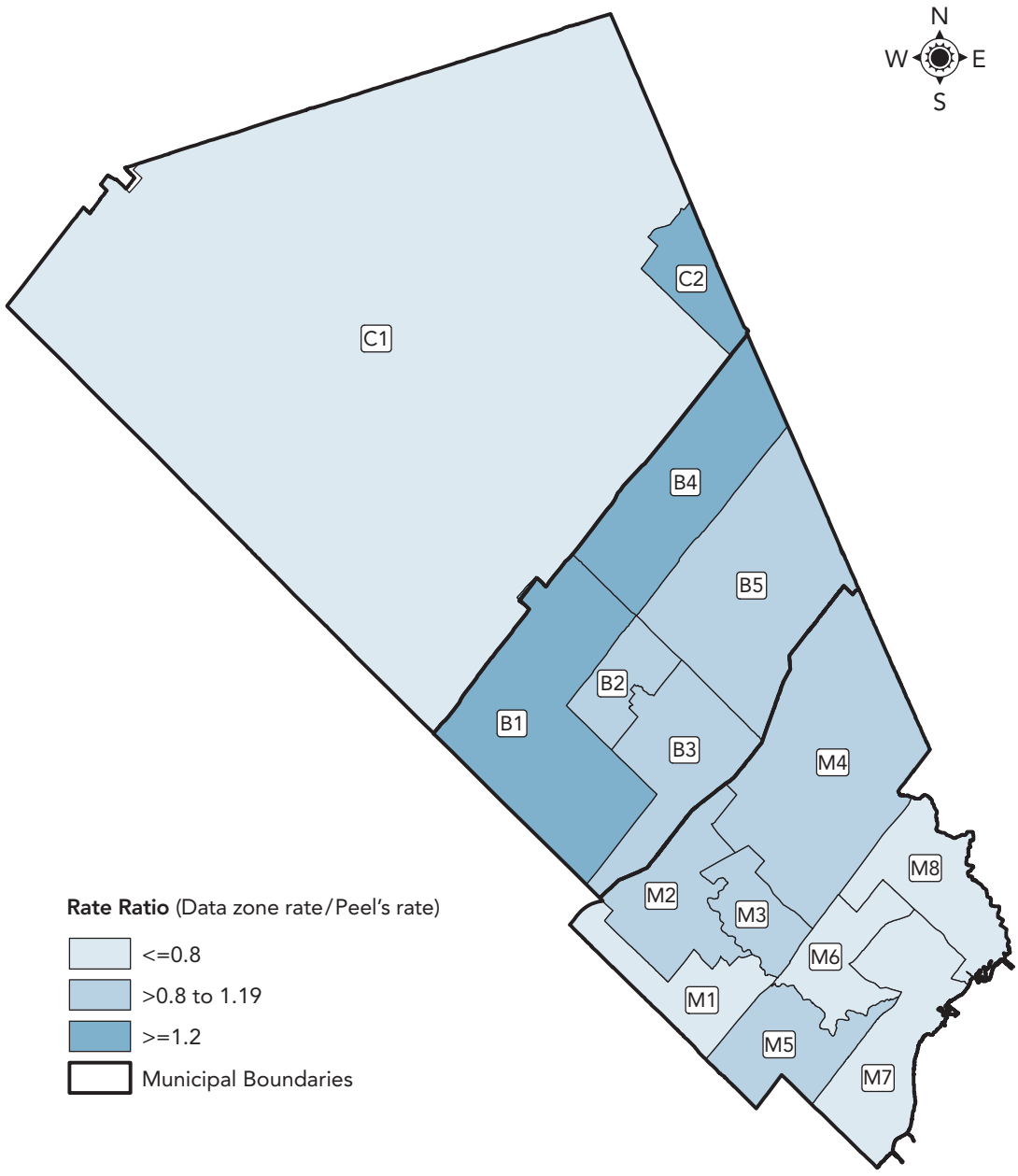
Table 2.10
Knowledge of Official Language among Immigrant Seniors† by Municipality, Peel, 2006

	Mississauga (%)	Brampton (%)	Caledon (%)	Peel (%)
English only	74.9	72.6	86.6	74.6
French only	0.4	0.1	0	0.3
English and French	3.2	1.9	4.6	2.8
Neither English nor French	21.6	25.3	8.8	22.3
	100.0	**100.0**	**100.0**	**100.0**

† Includes immigrant seniors aged 65 years and older.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

Map 2.3

Rate Ratio† of Recent Immigrants who do not speak English or French by Data Zone, Peel, 2006



† Rate ratio calculated as the rate of the data zone divided by the Peel rate which is 8.8%.

Data zones are denoted by the first letter of the municipality, followed by a number (e.g., C1 denotes Caledon data zone 1).

Source: Custom Profile Data, 2006 Census, Statistics Canada.

Table 2.11
Proportion of Recent Immigrants who do not Speak English or French, Peel Municipalities, Peel Data Zones, Peel, 2006

Data Zone	Number	Population*	Rate per 100 population
Caledon	65	515	12.6
C1	20	295	6.8
C2	25	225	11.1
Brampton	4,740	42,890	11.1
B1	825	6,325	13.0
B2	570	6,230	9.2
B3	1,165	11,280	10.3
B4	1,200	7,850	15.3
B5	975	11,195	8.7
Mississauga	5,635	74,805	7.5
M1	535	10,045	5.3
M2	440	6,140	7.2
M3	695	6,865	10.1
M4	1,530	14,555	10.5
M5	355	4,765	7.5
M6	830	12,010	6.9
M7	630	10,450	6.0
M8	615	9,970	6.2
Peel	10,435	118,220	8.8

* Total population of recent immigrants by knowledge of either official language.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

Employment and Working Conditions

Finding a job is an important part of starting a new life in a new country. While Canada's selection policies ensure that most immigrants are well educated, this does not necessarily translate into jobs that are appropriate for their education or skill level. In the past 30 years, the employment earnings of immigrants to Canada deteriorated between 1981 and 2000, and has yet to improve.[55]

Immigrants face barriers to finding meaningful employment.

Immigrants face multiple barriers to finding meaningful, profitable and secure employment.

The top five difficulties encountered by recent immigrants upon arrival in Canada include a lack of:

- recognition of international qualifications;
- work experience in Canada;
- proficiency in English;
- jobs; and
- social support networks.[53, 56]

Poor wages force some immigrants to hold multiple jobs simultaneously.[57] Circumstances may also force newcomers to work in unfamiliar roles. As a result, recent immigrants are more likely to be employed in

physically demanding jobs, shift work and non-permanent work.[58]

There are also some gender-specific issues that employed immigrants experience. Working-age female immigrants face the additional barrier of meeting family responsibilities with less support than in their home countries,[53] while male immigrants more commonly report work injuries requiring medical attention than do their Canadian-born counterparts.[59]

Immigrants in Peel are highly educated but their unemployment rate is higher.

Definition

To be in the ***labour force*** refers to persons who were either employed or unemployed during the week (Sunday to Saturday) prior to Census Day (May 16, 2006).

Labour force =
Employed + Unemployed

Not in the labour force refers to persons who, in the week (Sunday to Saturday) prior to Census Day (May 16, 2006), were neither employed nor unemployed. It includes students, homemakers, retired workers, seasonal workers in an off-season who were not looking for work, and persons who could not work because of a long-term illness or disability.[52]

The employment rate of immigrants to Canada increases and approaches the national average the longer they reside in Canada.[54] In Peel, the unemployment rate for recent immigrants is higher than the unemployment rate for long-term and non-immigrants (Table 2.12).

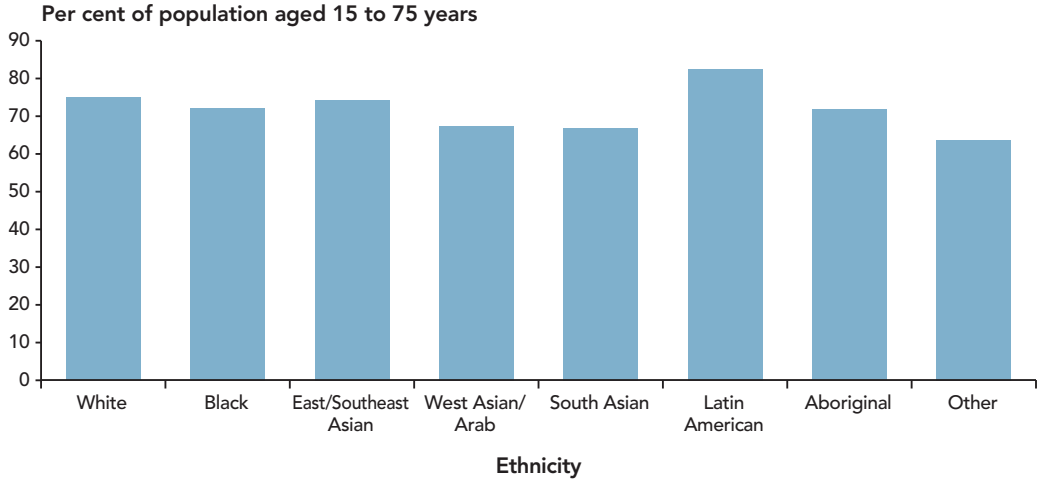
Table 2.12
Employment Status by Immigrant Status†, Peel, 2006

Employment Status	Recent immigrant (%)	Long-term immigrant (%)	Non-immigrant (%)
In the labour force	68.8	69.9	74.6
• Employed	61.0	65.9	70.0
• Unemployed	7.8	4.0	4.5
Not in the labour force	31.2	30.1	25.4
Employment rate	61.0	65.9	70.0
Unemployment rate	11.3	5.7	6.1

† Reflects population aged 15 years and older.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

The rate of current employment also varies by ethnicity in Peel, with South Asians, and those of "Other" ethnicity being less likely to have been at work in the previous week than those of Latin American or White ethnicity (Figure 2.5).

Figure 2.5
Population at Work During Past Week, by Ethnicity, Peel, 2000/2001, 2003, 2005, 2007/2008, 2009/2010 Combined



	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Per cent (95% CI)	75.0 (73.6 – 76.4)	72.1 (56.9 – 76.7)	74.3 (70.2 – 78.0)	67.4* (58.8 – 75.0)	66.9* (63.5 – 70.2)	82.5 (74.4 – 88.5)	71.8 (49.4 – 87.0)	63.7 (56.9 – 70.0)

* Use with caution.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2000/2001, 2003, 2005, 2007/2008, 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Immigrants are more commonly employed in processing, manufacturing and utilities than non-immigrants.

There are some differences between recent, long-term and non-immigrants in the types of jobs in which they are employed. Most notably, in Peel, it is more common for recent immigrants (16%) and long-term immigrants (13%) to hold positions in processing, manufacturing and utilities than it is for non-immigrants (4%) (Figure 2.6).

Figure 2.6
Top Five Occupation Classifications in Peel by Immigrant Status, Peel, 2006

† Based on population aged 15 years and older.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

Transportation to Work

Transportation, particularly the availability of and access to public transit, affects where newcomers can live and work, and thereby can be a barrier to employment. In Canada, recent immigrants are much more likely than non-immigrants to use public transit to commute to work.[50] This is also observed in Peel where a larger proportion of recent immigrants (25%) use public transit to get to work compared to long-term (12%) and non-immigrants (11%).[A3] More recent immigrants work within their municipality of residence (44%) than outside of the municipality in which they live (38%). The opposite is observed for long-term and non-immigrants. A much smaller proportion of these populations either have no fixed workplace address, work from home or work outside Canada (data not shown).[A3]

Income

Did You Know

Recent immigrants are poorer than the general population in Peel, despite their high levels of education and work experience. How long this income difference lasts is unknown.

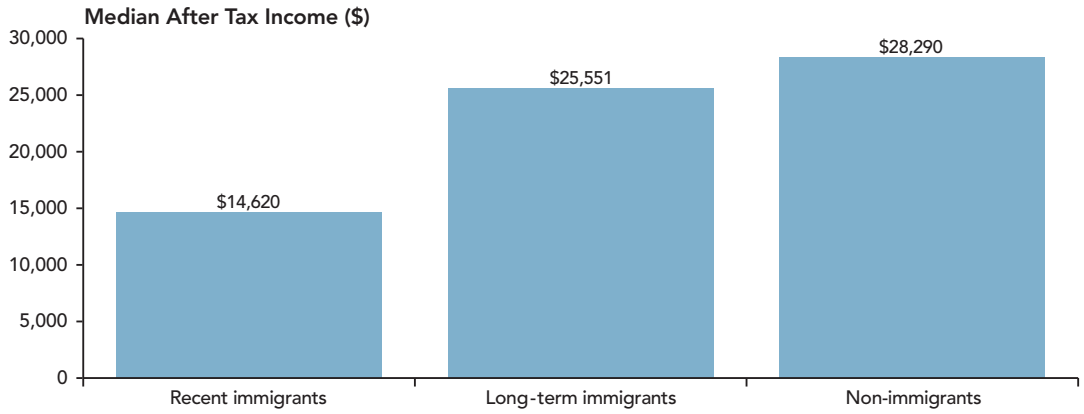
Many factors contribute to this outcome, particularly linguistic, social and economic barriers to labour force participation. Issues with the recognition of foreign credentials also play a role. Canada is proposing a change to the way foreign skilled workers' education credentials are assessed. The proposed change would mean that the foreign education credentials of applicants wanting to immigrate under the Federal Skilled Workers program would be assessed and verified by designated organizations prior to their arrival in Canada. This would let applicants know how their education credentials compare to Canadian credentials and provide them with a sense of how Canadian employers may value their education.[60]

Adequate income is important for all Canadians, but has particular relevance for recent immigrants who are trying to negotiate life in a new society. It often takes newcomers time to find employment as they build professional networks, try to overcome language barriers, and experience problems with recognition of their foreign credentials and work experience. Many accept employment below their level of training. As a result, many immigrants begin life in Canada with low income.

In Peel, recent immigrants are more likely than long-term immigrants and non-immigrants to have a lower income. The median annual income of long-term immigrants ($25,551) is higher than recent immigrants ($14,620), though still lower than non-immigrants ($28,290) (Figure 2.7).

The length of time that immigrants spend in low-income conditions is unknown. It is not clear whether the higher income status of long-term immigrants over recent immigrants is attributable to time spent in

Figure 2.7
Median Individual After Tax Income†‡ by Immigrant Status, Peel, 2005



† The median income of a population is the income level at which half of the population has a higher income and half of the population has a lower income.
‡ Based on population aged 15 years and older and excludes those who did not report income in 2005.
Note: includes income from all sources, including employment income, income from government programs, pension income, investment income and any other money income.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

Canada, or due to a change in the income status between earlier and later cohorts of immigrants. At the national level, over the past 15 to 20 years it has taken some immigrant populations longer to attain the same income level of non-immigrants.[61]

Definition

Racialization **is "a concept which refers to the social processes whereby certain groups come to be designated as different and are in turn subject to differential and unequal treatment".[62]**

Racialized groups in Canada are also disproportionately poorer than the general population. In 1995, in every Canadian province, the prevalence of low income was higher for racialized groups compared to other Canadians.[62]

Regardless of immigrant status, there is an observed difference in self-reported household income by ethnic origin. Individuals in Peel who are of White origin are generally less likely to have low-to-middle income compared to people who are of West Asian/Arab, South Asian, Black and East-Southeast Asian origin (Table 2.13).

Table 2.13
Household Income Level by Ethnicity,
Peel 2000/2001, 2003, 2005, 2007/2008, 2009/2010 Combined

Household Income Level	Ethnicity							
	West Asian/ Arab	South Asian	Black	East/ Southeast Asian	Other	White	Latin American	Aboriginal
Lowest to middle Per cent (95% CI)	10.3* (5.8–17.7)	6.2 (4.9–7.8)	6.6* (4.8–9.1)	5.8* (4.0–8.5)	3.8* (2.1–6.8)	2.4 (2.0–2.9)	NR	NR
Middle Per cent (95% CI)	22.9 (16.4–31.0)	22.5 (19.8–25.5)	21.8 (17.0–25.8)	13.5 (10.8–16.7)	12.6 (9.1–17.1)	8.7 (7.9–9.6)	15.1* (10.0–22.2)	NR
Upper-Middle Per cent (95% CI)	20.1* (14.7–26.8)	26.9 (24.1–30.0)	29.2 (24.9–33.9)	26.9 (23.0–31.2)	26.1 (21.1–31.7)	23.2 (21.9–24.5)	36.9 (25.9–49.3)	NR
Highest Per cent (95% CI)	21.7* (15.3–29.3)	27.8 (28.0–30.8)	24.4 (20.5–28.8)	38.8 (34.6–43.3)	37.1 (31.4–43.3)	51.7 (50.1–53.4)	27.9* (19.4–38.3)	26.7* (13.4–46.3)
Not Stated Per cent (95% CI)	25.0 (18.0–33.6)	16.5 (14.2–19.2)	18.6 (14.8–23.1)	14.9 (12.1–18.3)	20.4 15.1–26.9)	14.0 (12.8–15.2)	14.6* (8.4–23.9)	NR

Note: 95% CI reflects the 95% confidence interval of the estimate.
* Use estimate with caution.
NR = not releasable due to small numbers.
Source: Canadian Community Health Survey 2000/01, 2003, 2005, 2007/2008, 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Prevalence of Low Income

Definition

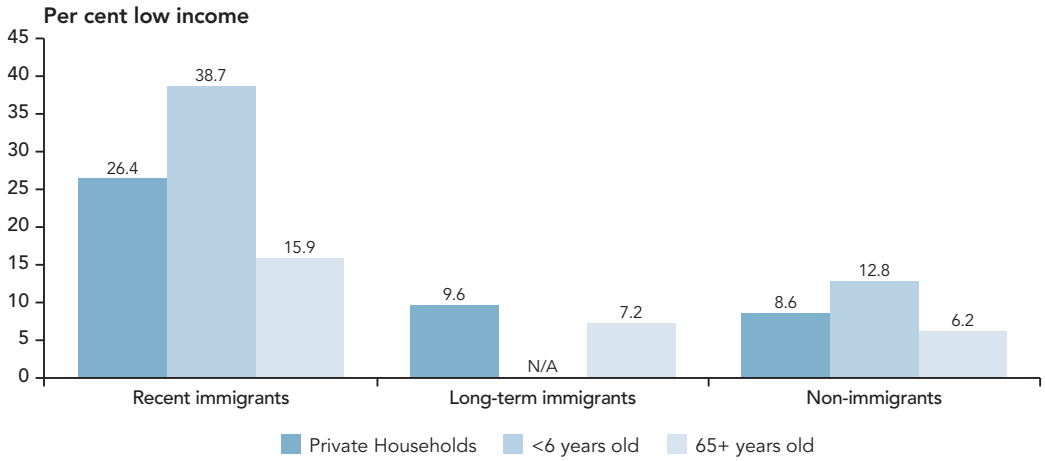
Low-Income Prevalence
In the 2006 Census, the ***prevalence of low income*** was defined as the proportion of families or unattached individuals who spent 20% or more of their total income on food, shelter and clothing compared to the average family or unattached individual.

This low-income cut-off (LICO) is based on a matrix that includes both family size and size of the community of residence. For example, a family of four living in an area with a population of 100,000 to 499,999 people would be classified as low income if its after-tax income level for 2005 was $27,532 or less.

In Peel, the prevalence of low income (after-tax) is higher among recent immigrants compared to long-term and non-immigrants for private households, including households with children under the age of six years and seniors aged 65 years and older (Figure 2.8).

Figure 2.8

Prevalence of After-Tax Low Income† among Selected Households by Immigrant Status, Peel, 2005



N/A - Not applicable.
† Refers to the position of a household (either an economic family or a person 15 years of age and over not in an economic family) in relation to Statistics Canada's low income after-tax cut-offs. Calculated from counts of low-income persons or families and the total number persons or families.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

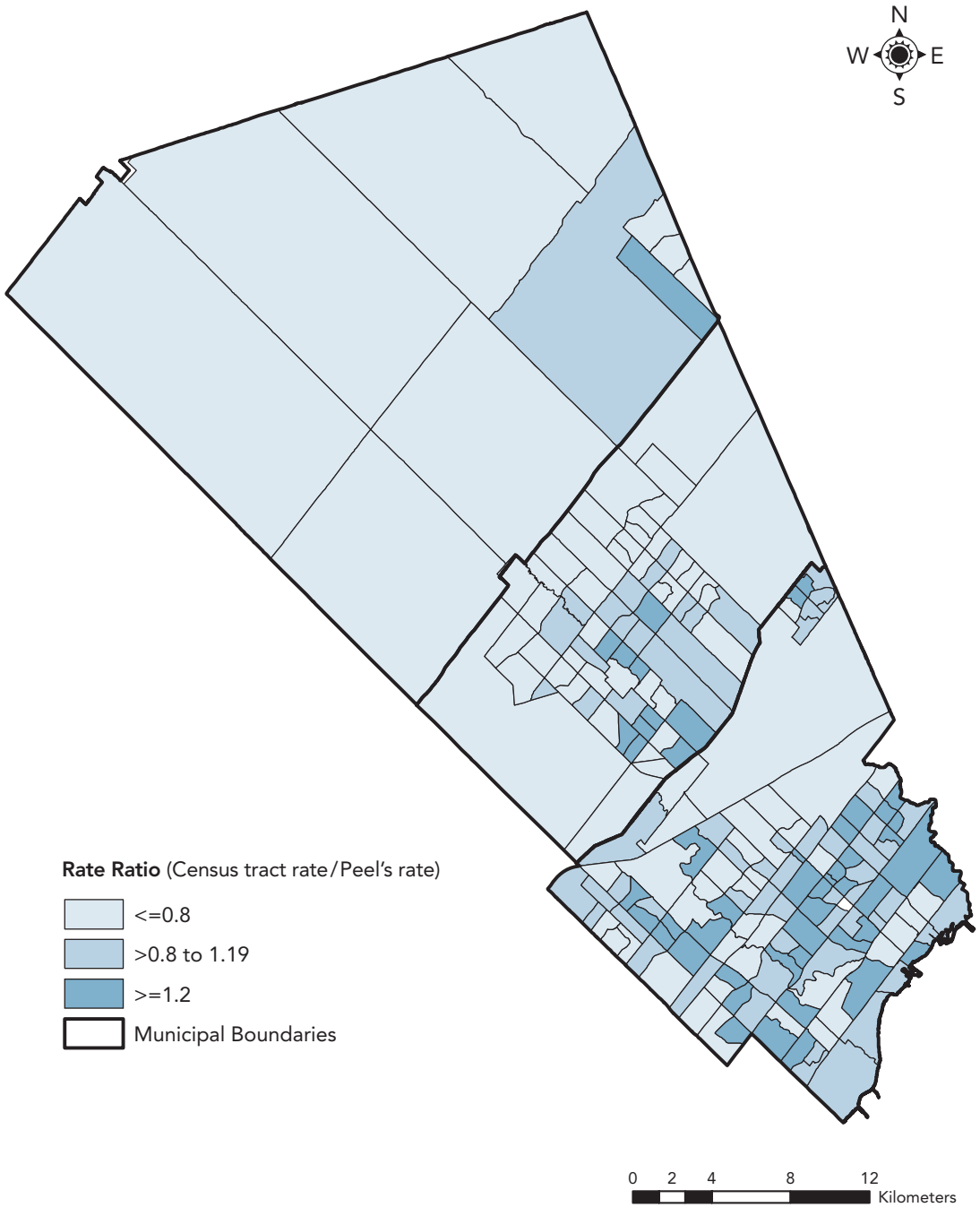
Map 2.4 shows the rate ratio of low-income prevalence for recent immigrants by census tract compared to Peel (data not available by Peel Data Zone). Census tracts with a low-income prevalence amongst recent immigrants of 20% or more than the Peel average are located in Mississauga.

Definition

A *rate ratio* is the result of the comparison of one rate to another rate. For example, if the prevalence of low income was 4.9 per 100 population in data zone C2 and 9.6 per 100 in Peel, the rate ratio would be calculated as 4.9 / 9.6 = 0.49. In this example, the prevalence of low income in data zone C2 is 49% below that of the Peel rate. A rate ratio of 1 indicates no difference between rates.

Map 2.4

Rate Ratio† of Low Income (After-Tax) among Recent Immigrants in Private Households by Census Tract, Peel, 2006



† Rate ratio calculated as the rate of the census tract divided by the Peel rate which is 26.4%.

Source: Custom Profile Data, 2006 Census, Statistics Canada.

Income Gradient and Health Status

Health status improves with income. To better understand the relationship between income and health, health outcomes are often plotted against categories of income. This type of comparison is called the income gradient. The "income gradient in health" is where health status typically improves at each step up income and social hierarchies.[16, 63]

There is a clear income gradient in health status for many health outcomes, including self-rated health, life expectancy, infant mortality and low birth weight, cardiovascular disease, injury and suicide.[56, 64-66] The process by which income impacts health is multi-faceted, and likely includes health behaviours, as well as material and psychosocial factors.[67] It has not been established whether the relationship between income status and health, which is seen in the general population, exists or is unequal among immigrant and ethnic groups in Peel.

Social Environment

Immigrants often need to rebuild their social networks, which may be an added challenge when they arrive in Canada. Immigrants to Canada have identified the need for social support when learning English or experiencing other language barriers, finding work (including securing jobs that are suited to their qualifications), "navigating the system" in Canada, coping with changing family dynamics, finding adequate and affordable child care, overcoming barriers to social services and programs, and dealing with unfulfilled expectations of life in Canada and perceived discrimination.[68]

Sense of Belonging

A feeling of belonging to a country, region and local community can influence a person's sense of identity and the extent to which he/she participates in society. A strong sense of belonging is positively associated with better physical and psychological well-being. These effects are fairly consistent despite the variation in definitions of community.

In Canada, 65% of Whites, 74% of South Asians, 50% of Koreans, 52% of Chinese, 52% of Southeast Asians and 54% of Latin Americans reported a strong sense of community belonging, although the community referred to in the question was not explicit. Sense of community belonging was strongly related to self-perceived general and mental health, even when other potentially confounding factors were taken into account.[69]

In 2009/2010, over two-thirds of Peel (69%) and Ontario (67%) residents reported having a strong sense of community belonging.[D1]

Definition

Social capital **refers to the "the norms and networks facilitating collective action for mutual benefit."[70] It is predicated on reciprocity, trust and the active and willing engagement of citizens within a participative community.[71] One of the hypothesized outcomes of social capital is a vibrant civic life.[72]**

Collective Social Capital

An important aspect of social capital is social cohesion, where there is mutual trust and respect between different sections of society.[73] Social cohesion has been linked to better physical health, including self-rated health, and is protective against cardiovascular disease and the risk of obesity and diabetes.[74] Social capital also influences health-related behaviours.[75, 76]

The effect of social capital on the adaptation process experienced by immigrants is an important factor to consider when studying health outcomes.

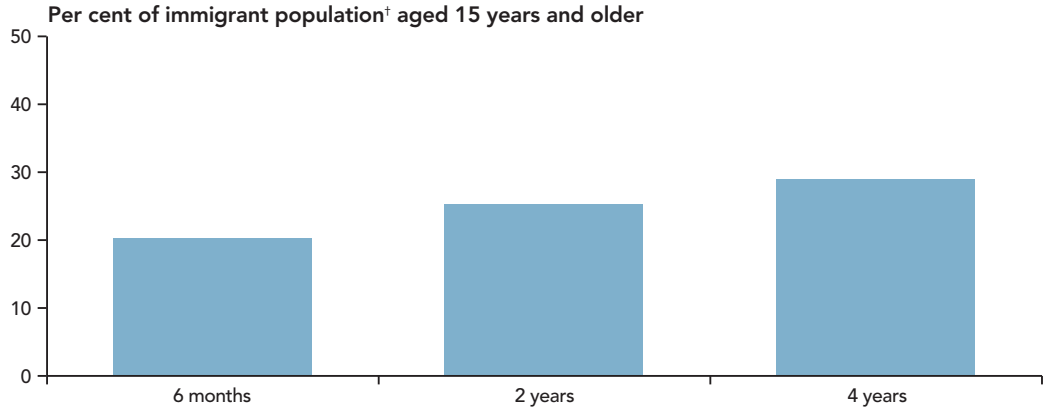
An analysis of the impact of social networks on the health of recent immigrants by immigrant class showed that:

- Permanent residents with more diverse friendship networks and those who were more frequently in contact with their friends were more likely to report as being healthy.
- Permanent residents who made new friends after landing in Canada were more likely than those who had not made new friends to report as being healthy.
- A higher proportion of permanent residents who were involved in activities of a group or organization self-reported as being healthy two years after arriving in Canada. This gap widened by four years after arrival.
- Having kinship (relationships with family or relatives living in Canada), friendship and organizational networks (participation in groups and organizations) had significant positive effects on the health of residents who arrived as family class immigrants.[77]

Membership in or participation in the activities of groups or organizations in Canada increased with length of stay in Canada.[77] A similar pattern was observed for immigrants who landed in the Toronto CMA in 2000/2001 (Figure 2.9).

Figure 2.9

Membership or Participation in Group/Organization Activities Over Time, Toronto CMA†, Wave 1, Wave 2 and Wave 3



	6 months	2 years	4 years
Per cent (95% CI)	20.2 (18.7 – 21.9)	25.3 (23.6 – 27.1)	29.0 (27.3 – 30.8)

† CMA - Census Metropolitan Area.
Notes: Based on immigrants who arrived in Canada between October 1, 2000 and September 30, 2001.
Wave 1, 2 and 3 data collected at six-months, two years and four years after landing respectively.
95% CI reflects the 95% confidence interval of the estimate.
Source: Longitudinal Survey of Immigrants to Canada, 2005, Statistics Canada.

Social Exclusion

Definition

Social exclusion **refers to the inability of certain groups or individuals to access the social, economic, political and cultural resources required for full participation in Canadian life based on structural inequalities. These inequalities can be based on race, class, gender, disability, sexual orientation and/or immigrant status.[78] Social exclusion is an important determinant of health.**

The experiences of inequality, unfair treatment and the stress of dealing with exclusion can negatively affect health status. In Canada, this has been the experience for many racialized groups, aboriginal people and recent immigrants.[78]

Twenty-nine per cent of immigrants living in the Toronto CMA reported having experienced discrimination within two years of arriving in Canada, or having been treated unfairly by others because of their ethnicity, culture, race or skin colour, language or accent, or religion since their arrival in Canada.[C2]

While there is growing evidence that there is a link between self-reported racism or discrimination and negative mental health and health-related behaviours,[79, 80] available data must be interpreted with caution due to inconsistent definitions, subjective data and poorly designed studies.[81]

Multiple-Family Households

Definition

A *multiple-family household* is made up of two or more families (with or without additional non-family persons) occupying the same private dwelling.[52]

Private households in Peel appear to be wealthy; however, factors such as multiple-family households, influence wealth. The proportion of multiple-family households in Peel (6%) is double that of Ontario (3%). They are most prevalent in Brampton where almost one in 10 private homes is a multiple-family household (Table 2.14).

Table 2.14
Household Types,
Peel, Peel Municipalities and Ontario, 2006

	Peel (%)	Mississauga (%)	Brampton (%)	Caledon (%)	Ontario (%)
One family household	76.6	76.1	76.5	83.5	70.0
Multiple-family household	6.4	5.1	9.1	3.8	2.5
Non-family household	17.0	18.8	14.4	12.7	27.5
Total private households	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: 2006 Census, Statistics Canada.

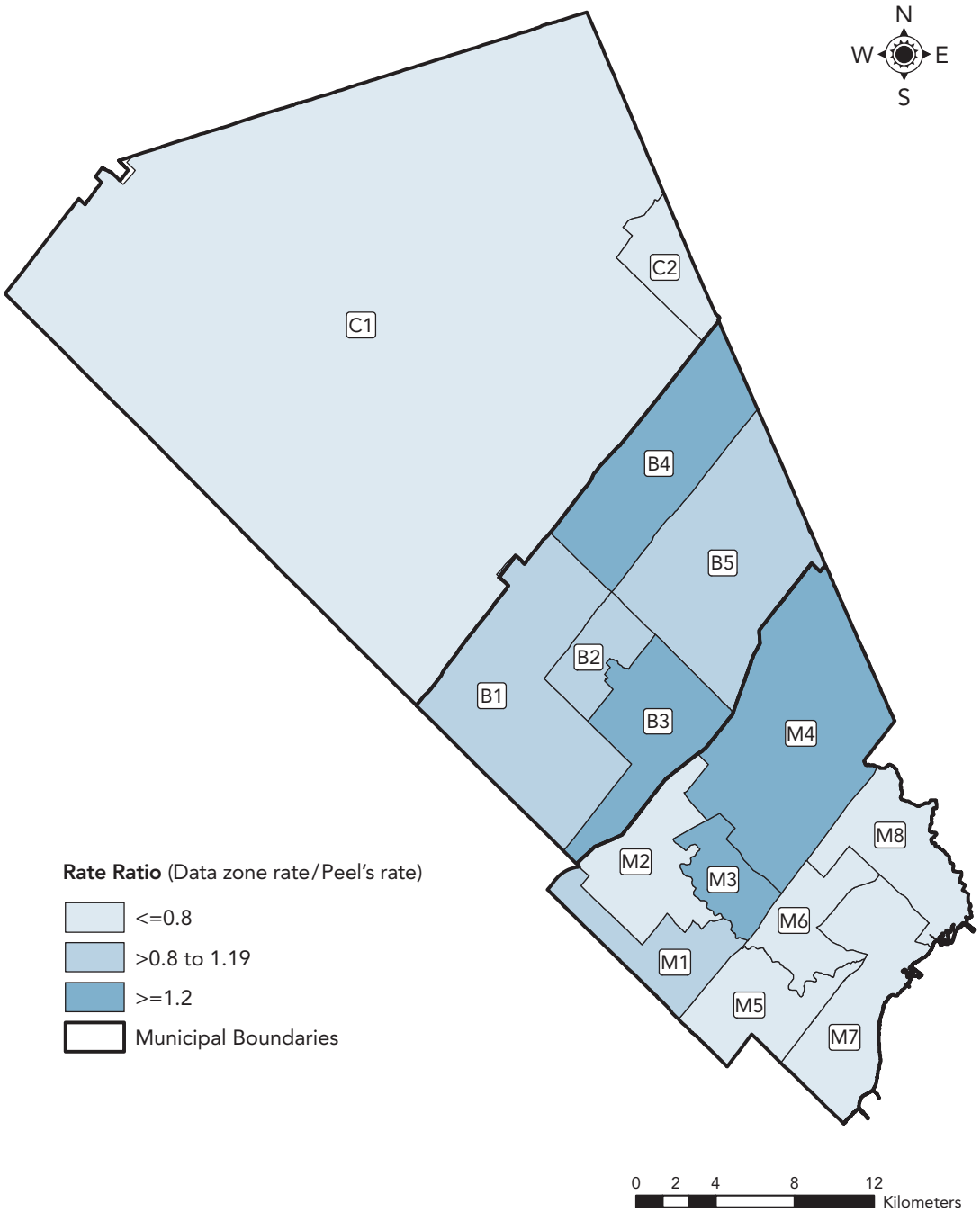
Table 2.15
Living Arrangements by Immigrant Status, Peel, 2006

Living Arrangements	Recent immigrants (%)	Long-term immigrants (%)	Non-immigrants (%)
Census Family*	91.3	89.4	91.6
Multi-family†	5.0	4.3	1.4
Non-family††	3.7	6.3	7.0
Total persons living in private households	**100.0**	**100.0**	**100.0**

* Census family includes married/common-law couples of same or opposite sex with or without children or lone-parent families with children.
† Persons living with relatives other than spouse, common-law partner or children.
†† Persons living with non-relatives only or living alone.
Source: Custom Profile Data, 2006 Census, Statistics Canada.

There are four areas in Peel (data zones B3 and B4 in Brampton, as well as M3 and M4 in Mississauga) where the proportion of multiple-family households is 20% or more higher than that for Peel as a whole. Map 2.5 shows the ratio of multiple-family households by data zones in Peel.

Map 2.5
Rate Ratio† of Multiple-Family Households by Data Zone, Peel, 2006



† Rate ratio calculated as the rate of the data zone divided by the Peel rate which is 6.4%.

Source: 2006 Census, Statistics Canada.

Table 2.16
Proportion of Multiple-Family Households, Peel Municipalities, Peel Data Zones, Peel and Ontario, 2006

Data Zone	Number	Population*	Rate per 100 population
Caledon	690	18,210	3.8
C1	495	11,110	4.5
C2	200	7,095	2.8
Brampton	11,400	125,930	9.1
B1	1,800	25,025	7.2
B2	1,670	23,165	7.2
B3	2,445	27,635	8.9
B4	3,000	17,500	17.1
B5	2,455	32,550	7.5
Mississauga	11,045	214,920	5.1
M1	1,455	25,720	5.7
M2	975	23,695	4.1
M3	1,540	16,430	9.4
M4	2,730	29,540	9.2
M5	755	20,135	3.8
M6	1,230	28,285	4.6
M7	965	38,335	2.5
M8	1,325	32,715	4.1
Peel	23,135	359,060	6.4
Ontario	113,190	4,555,025	2.5

* Total population of private households.
Source: 2006 Census, Statistics Canada.

Data Gaps

- The loss of the mandatory Census means that the availability and quality of data about immigrants will change.
- Data on the length of time recent immigrants remain unemployed are unavailable.
- More data on underemployment by immigrant status and ethnicity is needed.

chapter 3

SELF-RATED HEALTH, LIFE EXPECTANCY AND MORTALITY

Key Messages

- In Peel we do not see a meaningful relationship between life expectancy and income until we examine the relationship by immigrant status. The income gradient for life expectancy is greatest for non-immigrants.
- The difference in life expectancy between immigrants and non-immigrants is greatest among those in the lowest income group (difference of 8.7 years for males and 7.8 years for females).
- Mortality rates are lower for Peel immigrants compared to the Canadian-born population.

Upon their arrival to Canada, immigrants are generally healthier than the native-born population. However, in the years following immigration, the health of immigrants may decline and approach that of the native-born population. There are exceptions to this observation, such as certain infectious diseases which may be more prevalent among immigrants.[21, 82, 83]

This chapter describes differences in self-rated health, life expectancy and mortality by immigrant status.

At times throughout this chapter, data are only presented for immigrants compared to non-immigrants due to limitations of the data and the inability to report by length of time since immigration.

Self-Rated Health

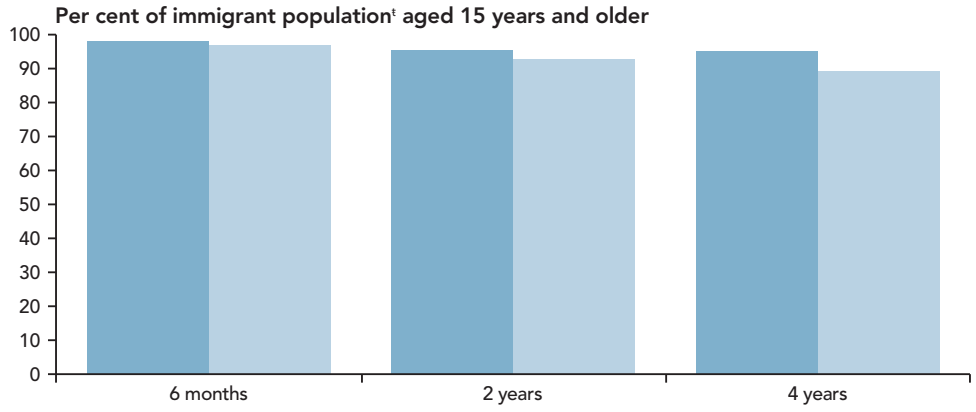
Self-rated health is an individual's assessment of his or her general health and is an important predictor of disability and mortality.[84-89]

Immigrants' Self-Rated Health during First Four Years in Canada

Two different analyses of Longitudinal Survey of Immigrants to Canada (LSIC) data resulted in similar findings showing that overall, recent immigrants to the Toronto Census Metropolitan Area (CMA) have declining self-rated health after arrival to Canada. Some subgroups of immigrants were also found to be more likely to report declining health or have a higher risk of poorer or declining health; for example, there was a steeper decline in self-rated health amongst immigrant

Figure 3.1

Immigrants Self-Reporting as Healthy† Over Time by Sex, Toronto CMA, Wave 1, Wave 2 and Wave 3



	6 months	2 years	4 years
Male per cent (95% CI)	97.9 (96.9 – 98.6)	95.5 (94.1 – 96.5)	95.1 (93.8 – 96.1)
Female per cent (95% CI)	96.8 (95.7 – 97.6)	92.8 (91.2 – 94.1)	89.3 (87.5 – 90.9)

† Defined as excellent, very good or good.
ᵗ CMA- Census Metropolitan Area.
% (UCL- LCL) - Estimates are followed by corresponding 95% confidence intervals in brackets (i.e. upper confidence Limit- lower confidence limit).
Notes: Based on immigrants who arrived in Canada between October 1, 2000 and September 30, 2001.
Wave 1, 2 and 3 data are based on six-months, two years and four years after arriving in Canada respectively.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Longitudinal Survey of Immigrants to Canada, 2005, Statistics Canada.

females compared to immigrant males between six-months and four years after arrival (Figure 3.1).[90]

Simple descriptive analyses found a significant decline in self-rated health amongst immigrants of South Asian, West Asian/Arab and East/Southeast Asian origin between six-months and four years after landing in the Toronto CMA when compared to immigrants of other origins.[C1, C2, C3]

Factors associated with poor or fair health at six-months after immigration, as well as the decline in self-reported health in the first four years after immigration were also identified through a separate analysis of LSIC data (Table 3.1).

Newcomers who are at risk of both poorer self-rated health and declining self-rated health include adults aged 40 to 64 years and those who do not own a home. In addition, refugees and refugee claimants were at risk of declining self-rated health.[90]

Table 3.1
Newcomers† at Risk for Poorer‡ and/or Declining€ Self-Rated Health During First Four Years after Arrival, Toronto, 2001-2005

At-risk for poorer self-rated health	At-risk for declining self-rated health	At-risk for poorer and declining self-rated health
• Lower income ($20,000 per year or less) compared to those with income over $20,000	• Women (compared to men)	• Adults aged 40 to 64 years (compared to 15 to 39 year-olds)
• No English language proficiency	• Refugees (compared to economic and family class immigrants)	• Don't own home (compared to newcomer homeowners)
• No OHIP coverage (compared to newcomers with OHIP coverage)	• Married residents (compared to unmarried residents)	
• Unsatisfied with immigration experience (compared to those satisfied with the immigration experience)		
• Unmarried newcomers (compared to married residents)		

† Newcomers aged 15 to 64 years in Toronto Census Metropolitan Area who had immigrated to Canada in 2000 and 2001.
‡ "fair" or "poor" self-rated health status at six-months after immigration.
€ transitioning from "excellent", "very good" or "good" to "fair" or "poor" self-rated health between six months and four years after immigration.
Adapted from: Toronto Public Health and Access Alliance Multicultural Health and Community Services. The Global City: Newcomer Health in Toronto. November 2011.
Sources: Newbold, KB. Unpublished data and analysis, 2011.
Longitudinal Survey of Immigrants in Canada. 2001-2005, Statistics Canada.

Life Expectancy

Definition

Life expectancy (LE) estimates the average age at death for a group or cohort at birth. Life expectancy is calculated based on the current mortality rates experienced by all age groups in the population.

Life expectancy at birth is a measure of the number of years a person is expected to live at birth.

Life expectancy at age 25 is a measure of the remaining years a person is expected to live by the time they are 25 years of age.

Definition

An income ***quintile*** is calculated by dividing income distribution (e.g., of a household or individual) into five quantiles or parts based on the income distribution of the population of interest.

Quantiles refer to divisions of a distribution into equal, ordered subgroups. For example, deciles are tenths; quartiles are quarters; quintiles are fifths; and terciles are thirds.

In Canada, life expectancy at birth is an estimated 81 years. The life expectancy for most countries from which immigrants to Canada originate is lower than that of Canada. For example, life expectancy at birth in India is 64 years and in China is 74 years.[91]

Since the majority of immigrants are adults when they arrive in Canada, this section of the report will focus on life expectancy at the age of 25 years, in other words how many remaining years of life one is expected to have at age 25. The data source for these analyses was the 1991-2001 Canadian census mortality follow-up study.

In populations of more-developed countries, life expectancy has been shown to generally increase with higher levels of income.[92, 93] This relationship between life expectancy and income is known as the "income gradient"; however, it was not reflected in Peel's population for both males and females as a whole (data not shown).[94]

When data were analyzed and separated by immigrant status, an income gradient for both immigrants and non-immigrants, as well as for men and women was observed. The gradient in life expectancy is more marked for men than for women (Figure 3.2 and 3.3). The difference in life expectancy between the lowest and highest income quintile for both immigrant men and non-immigrant men is greater than that for their female counterparts.[94]

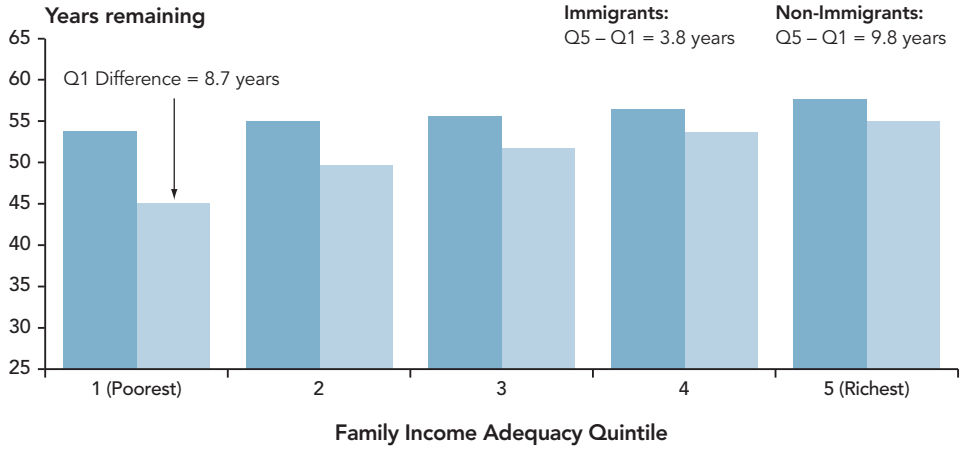
This gradient is also greater for non-immigrants than for immigrants across all income quintiles from the poorest to the richest.

Overall, immigrants who are 25 years or older can expect to live longer than non-immigrants in Toronto and Peel. This is true for both males and females. The difference in life expectancy between immigrants and non-immigrants is sharpest at the lowest income quintile (difference of 8.7 years for males and 7.8 years for females).[94]

The very large difference in life expectancy within the poorest quintile between immigrants and non-immigrants points to the influence of other factors (such as education, employment and social support). In addition, the healthy immigrant effect, as explained in Chapter 1, may also play a role. This helps us to understand why we cannot always see a clear relationship between income level and health outcomes in Peel, and speaks to the need to analyze data by immigrant status to understand these relationships further.

Canadian-born males and females have a lower life expectancy at age 25 years compared to immigrants.

Figure 3.2
Remaining Life Expectancy at Age 25 by Immigrant Status and Income Adequacy Quintile, Males, City of Toronto and Peel, 1991-2001

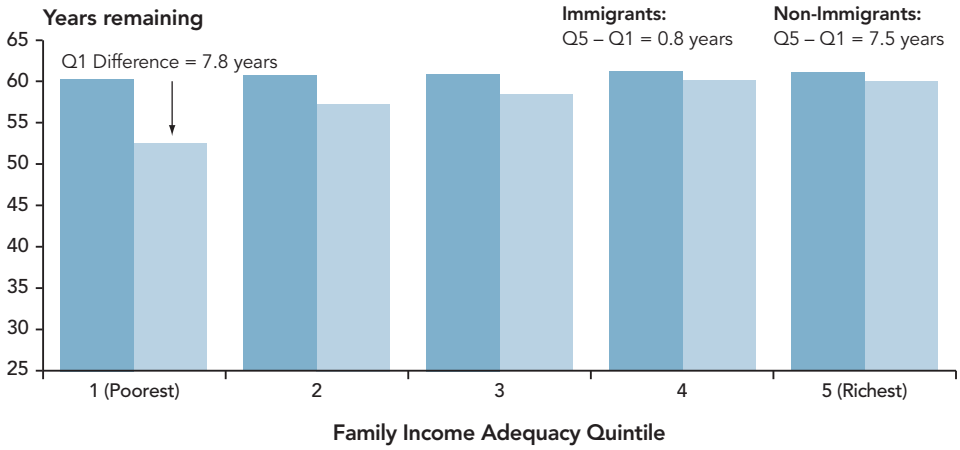


	1 (Poorest)	2	3	4	5 (Richest)
Immigrants (95% CI)	53.8 (53.3 – 54.3)	55.0 (54.5 – 55.5)	55.6 (55.0 – 56.1)	56.4 (55.7 – 57.0)	57.6 (56.9 – 58.3)
Non-Immigrants (95% CI)	45.1 (44.4 – 45.9)	49.7 (49.0 – 50.4)	51.7 (51.1 – 52.3)	53.6 (53.0 – 54.1)	55.0 (54.5 – 55.5)

† Including non-permanent residents (foreign-born).
Notes: Q5-Q1 difference for immigrants = 3.9 years; Q5-Q1 difference for non-immigrants = 9.8 years.
95% CI reflects the 95% confidence interval of the estimate.
Source: Stratton J, Mowat DL, Wilkins R, Tjepkema M. Income disparities in life expectancy in the City of Toronto and Region of Peel, Ontario. Chronic Diseases and Injuries in Canada, Sept 2012; 32 (4): 208-215.

Figure 3.3

Remaining Life Expectancy at Age 25 by Immigrant Status and Income Adequacy Quintile, Females, City of Toronto and Peel, 1991-2001



	1 (Poorest)	2	3	4	5 (Richest)
Immigrants Per cent (95% CI)	60.3 (59.8 – 60.8)	60.7 (60.1 – 61.2)	60.9 (60.3 – 61.5)	61.2 (60.5 – 61.9)	61.1 (60.3 – 61.8)
Non-immigrants Per cent (95% CI)	52.5 (51.8 – 53.2)	57.3 (56.7 – 58.0)	58.4 (57.7 – 59.0)	60.1 (59.4 – 60.7)	60.0 (59.4 – 60.5)

† Including non-permanent residents (foreign-born).
Notes: Q5-Q1 difference for immigrants = 0.8 years; Q5-Q1 difference for non-immigrants = 7.5 years.
95% CI reflects the 95% confidence interval of the estimate.
Source: Stratton J, Mowat DL, Wilkins R, Tjepkema M. Income disparities in life expectancy in the City of Toronto and Region of Peel, Ontario. Chronic Diseases and Injuries in Canada, Sept 2012; 32 (4): 208-215.

Mortality and Leading Causes of Death

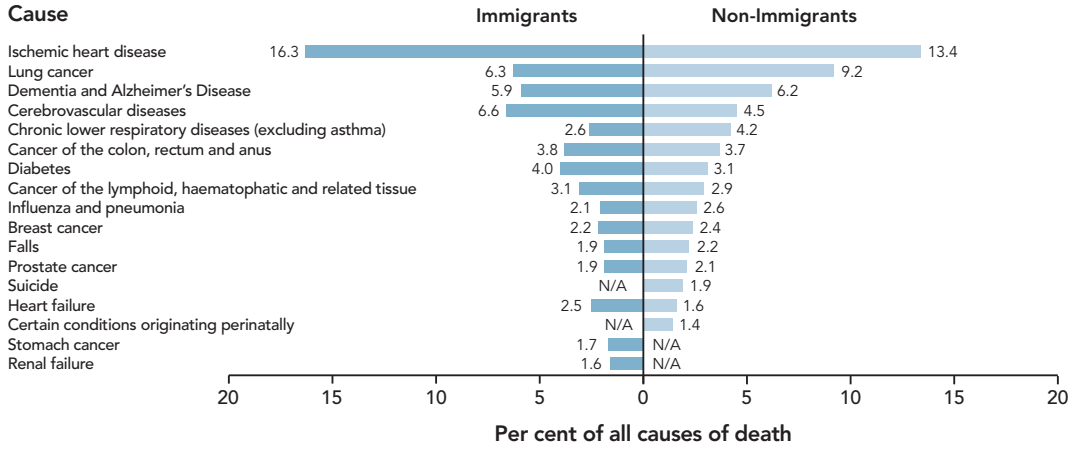
Immigrants in Canada, including refugees, generally have lower age-standardized mortality rates compared to the Canadian-born population. Although immigrant mortality rates tend to rise as their time in Canada lengthens, they remain lower than that of the non-immigrant population. Mortality rates (for all causes combined) are higher among the refugee population compared to non-refugees.[82]

Consistent with what has been observed at the national level, in Peel, between 2005 to 2007 combined, the all-cause mortality rate was lower for immigrants (435.5 per 100,000 population) compared to non-immigrants (613.9 per 100,000 population).[E1, A3]

In 2006, the leading causes of death in Peel overall were ischemic heart disease, stroke and dementia/Alzheimer's disease.[E2] The top causes of death amongst Peel's immigrant population were ischemic heart disease, stroke and lung cancer (Figure 3.4).

Figure 3.4

Top 15 Leading Causes of Mortality by Immigrant Status, Peel, 2006



Note: percentages will not add up to 100% since only the top 15 leading causes are shown here.
N/A - Not applicable since it is not one of the Top 15 causes for the subgroup.
Sources: Ontario Mortality Database 2006, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care; Custom Profile Data, 2006 Census, Statistics Canada.

chapter 4

REPRODUCTIVE AND PERINATAL HEALTH

Key Messages

- Ethnic-specific fetal growth standards have been shown to better predict adverse infant outcomes than the sex-specific growth standard currently used. There is a need to use ethnic-specific intrauterine growth standards particularly for the South Asian, Caribbean and East Asian populations.
- Peel's immigrant mothers are more likely than Canadian-born mothers to breastfeed their babies for six months or longer.

Immigrant women may have different health needs during pregnancy and childbirth compared to women born in Canada. A woman's genetic background may result in differences in the prevalence of certain conditions (e.g., sickle cell anemia), which may affect her health needs during pregnancy and delivery.

In addition, immigrant women who come to Canada already pregnant may not have received prenatal care in their country of origin and therefore may need additional health care.

Health-Care Use and Prenatal Class Attendance

While prenatal care is covered by the Ontario Health Insurance Plan (OHIP), in some instances women who recently arrived in Canada may be ineligible (e.g., those who have a temporary resident permit, or who are permanent residents, but have been in Canada for less than three months). Refugee claimants have access to Interim Federal Health (IFH) and are eligible for prenatal care.

Did You Know

Women without health coverage who are under 34 weeks pregnant can receive prenatal health care and local hospital referral for childbirth through Community Health Centres at a reduced cost.

There are two Community Health Centres in Peel: East Mississauga Community Health Centre and Bramalea Community Health Centre. For more information, visit eastmississaugachc.org/ or bramaleachc.ca/.

Immigrant families may have lower socioeconomic status, a factor which is associated with higher incidence of maternal and child health problems.[96] Some immigrant women may avoid accessing health-care services in order to avoid incurring additional expense and potentially harming their chances of a successful settlement to Canada.[96]

In Peel, immigrant women, especially newcomers, may have increased difficulties accessing prenatal care, finding a family doctor who speaks in their native tongue, or may be unaware of needing scheduled prenatal health-care visits.[97]

In addition, immigrant women in Peel are less likely than Canadian-born women to attend a prenatal class.[F] Barriers to prenatal class attendance among immigrant women include language, transportation, time and distance to classes. Immigrant women, especially recent immigrants, may not be aware of the availability of free prenatal health education. In addition, some immigrant women may also not attend prenatal classes where men are present.[97]

Health Behaviours during Pregnancy

As described in Chapter 1, immigrants tend to be healthier than non-immigrants – a relationship that is likely true for pregnant immigrant women.[98] Pregnant mmigrant women tend to smoke less[99] and consume less alcohol than non-immigrants,[D1] which is beneficial for fetal development.

However, there are other healthy behaviours immigrants are less likely to follow, such as taking a folic acid supplement before and during pregnancy to reduce the risk of neural tube defects in the fetus. Recent immigrant women who have immigrated in the last five years (40%), are less likely than Canadian-born women (60%) to take folic acid prior to pregnancy.[G]

Reproductive Rate

The majority of infants in Peel are born to immigrant mothers.

In 2007, there were 16,347 births in Peel; two-thirds of which were to women born outside of Canada.[H] Peel has a higher proportion of mothers born in South Asia and the Caribbean and a lower percentage of East-Asian-born mothers as compared to the rest of the GTA and Ontario. There was a 37% increase in the proportion of live births to South-Asian-born mothers in Peel between 2002 and 2006.[H]

Peel Facts

- 30% of Peel infants are born to South-Asian-born mothers.[H]

Low Birth Weight and Small for Gestational Age

Definition

Low birth weight is defined as the birth weight of an infant weighing less than 2,500 grams.

An infant is defined as being ***small for gestational age (SGA)*** when his/her birth weight is below what would be expected for his/her sex and gestational age when compared to a standard group of Canadian infants. For example, if a boy's birth weight is below the 10th percentile value for Canadian boys (i.e., 90% of boys born in Canada weighed more than he did at birth), then he would be defined as SGA. Infants born SGA are thought to have experienced restricted growth during gestation.

Preterm birth is defined as a birth delivered before 37 completed weeks of gestation.

Low birth weight is a measure of the general health of an infant at birth. Infants who have low birth weight may have been born preterm or may have experienced fetal growth restriction. Ethnic origin has an impact on fetal birth weight, which may be caused by differences in body composition, genetic background, prevalence of health conditions, health behaviours or prenatal care.

Full-term infants of immigrant mothers weigh significantly less at birth than infants of non-immigrant mothers.

Peel has an elevated low-birth-weight rate compared to the provincial rate, which is the result of a higher SGA rate and not a difference in preterm birth rates.

Peel has a higher SGA rate than Ontario because of the large proportion of mothers who are immigrants. Immigrant mothers have babies with significantly lower birth weights than infants of non-immigrant mothers (Table 4.1). As a result, more babies are defined as being SGA. Ethnic-specific fetal growth standards would show that many of these infants are actually appropriately sized for their ethnic background.

Table 4.1
Percentile of Birth Weight among Term† Infants by Maternal Region of Birth, Peel, 2002-2006

Maternal Region of Birth	Females			Males		
	10th Percentile of Birth Weight (grams)	Difference	95% CI of Difference††	10th Percentile of Birth Weight (grams)	Difference	95% CI of Difference††
Canadian	2,863	Reference	–	2,980	Reference	–
South Asian	2,710	-153	-174 to -132	2,780	-200	-222 to -178
East Asian	2,778	-85	-113 to -57	2,840	-140	-171 to -109
Caribbean	2,730	-133	-169 to -97	2,813	-169	-207 to -131
African	2,800	-63	-97 to -29	2,863	-117	-188 to -46
Other	2,830	-33	-55 to -11	2,948	-32	-56 to -8

† Term infants are between 37 and 42 completed weeks of gestation at birth.
†† Difference significant for all comparisons at p=0.01 level.
Source: Ontario Live Birth Database 2002-2006, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care.

Peel Facts

- **Infants of South-Asian-born women weigh less than those born to Canadian-born women (153 grams less for female infants and 200 grams for male infants).[H]**

Ethnic-specific intrauterine growth standards

Since infants of immigrant mothers have lower birth weight than infants of Canadian-born mothers, the use of the Canadian fetal growth standard may lead to the misclassification of infants of immigrant mothers as being SGA when they may be deemed appropriately sized when compared against an appropriate ethnic-specific fetal growth standard.[100] Ethnic-specific fetal growth standards, have been shown to better predict adverse infant outcomes than the sex-specific growth standard currently used.[101]

Did You Know

Peel Public Health produced a health status report entitled ***Born in Peel: Examining Infant and Maternal Health 2010***. For more information about maternal and infant health, refer to this report at: peelregion.ca/health/reports.

Breastfeeding

Breastfeeding is recognized as an optimal method of feeding for the health of the infant and the mother. Exclusive breastfeeding for the first six months of life is recommended by the Canadian Paediatric Society, Health Canada and the World Health Organization (WHO).

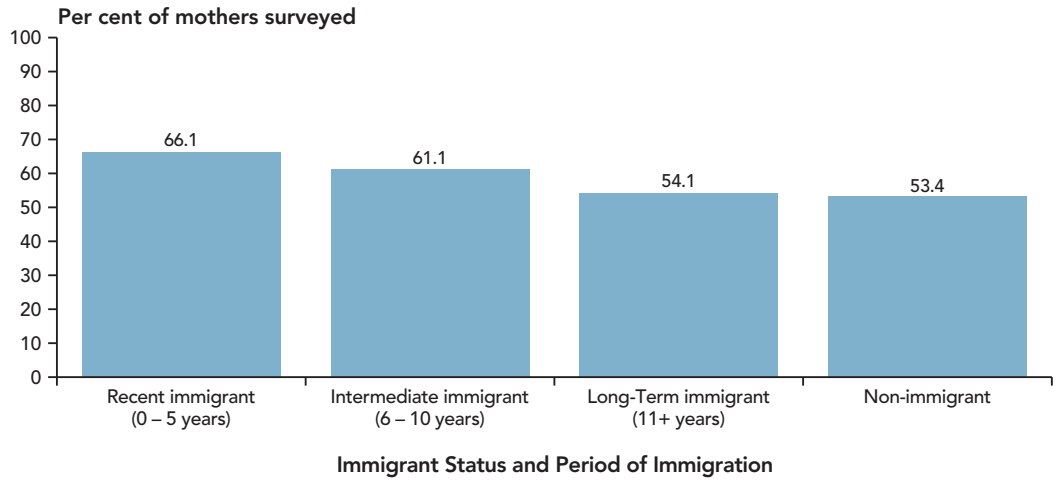
Peel Facts

Breastfed babies are less likely to develop infections and more likely to be of a healthy weight.[102]

Duration of Breastfeeding

While 97% of Peel mothers start breastfeeding, only 58% continue to do so for six months or longer.[J1] Immigrant mothers (61%) are more likely to breastfeed their babies for six months or longer compared to Canadian-born mothers (53%).[J1] The six-month breastfeeding duration rate decreases with length of time in Canada (see Figure 4.1).

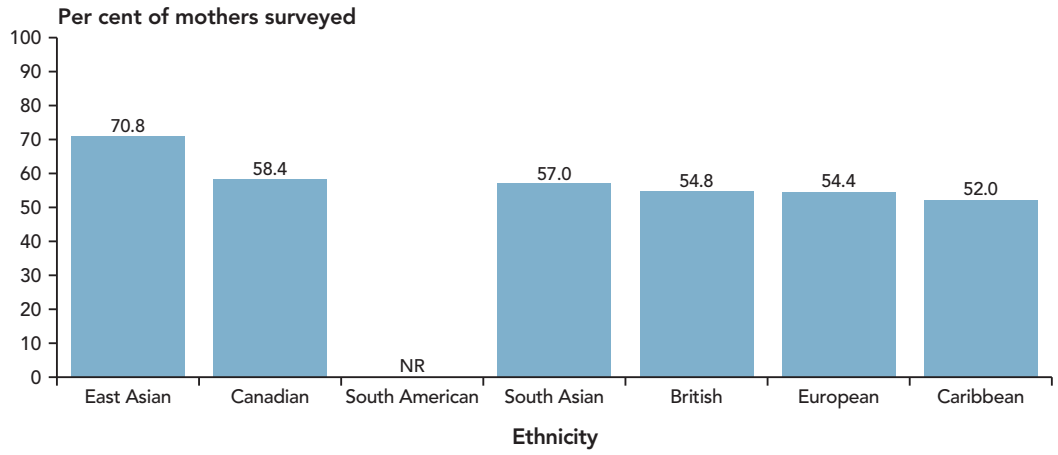
Figure 4.1
Breastfeeding at Six-Months Post-Partum by Immigrant Status, Peel, 2009/2010



Source: Breastfeeding Practices in the Region of Peel, 2009/2010, Peel Public Health.

Mothers of East-Asian ethnicity (71%) are more likely to breastfeed their baby to six-months of age compared to mothers belonging to all other ethnic groups combined (Figure 4.2).

Figure 4.2
Breastfeeding at Six-Months Post-Partum by Ethnicity†, Peel, 2009/2010



† Multiple response options were allowed.
Source: Breastfeeding Practices in the Region of Peel, 2009/2010, Peel Public Health.

In Peel, immigrant mothers are more likely than their Canadian-born counterparts to be influenced by their family to breastfeed.[J2] A woman's decision to breastfeed is influenced by her past experiences, as well as family, cultural and societal norms, and other factors.[103]

Peel Program

Peel Public Health, designated as a Baby-Friendly agency by the Breastfeeding Committee of Canada, supports mothers in making informed decisions on infant feeding through services such as a breastfeeding helpline, breastfeeding clinics and a peer-to-peer program. Translation support is available for all of these services.

Immigrant mothers in Peel are less likely to seek external resources, such as a lactation consultant for breastfeeding support, and rely more on their spouse or family for support. For example:

- Only 6% of immigrant women use a lactation consultant's support for breastfeeding compared to 12% of Canadian-born mothers.[J1]
- Only 64% of immigrant mothers were aware of Peel Public Health's breastfeeding clinics compared to 83% of Canadian-born mothers.[J2]
- Approximately 69% of immigrant mothers were aware of Peel's Breastfeeding Helpline compared to 81% of Canadian-born mothers.[J2]

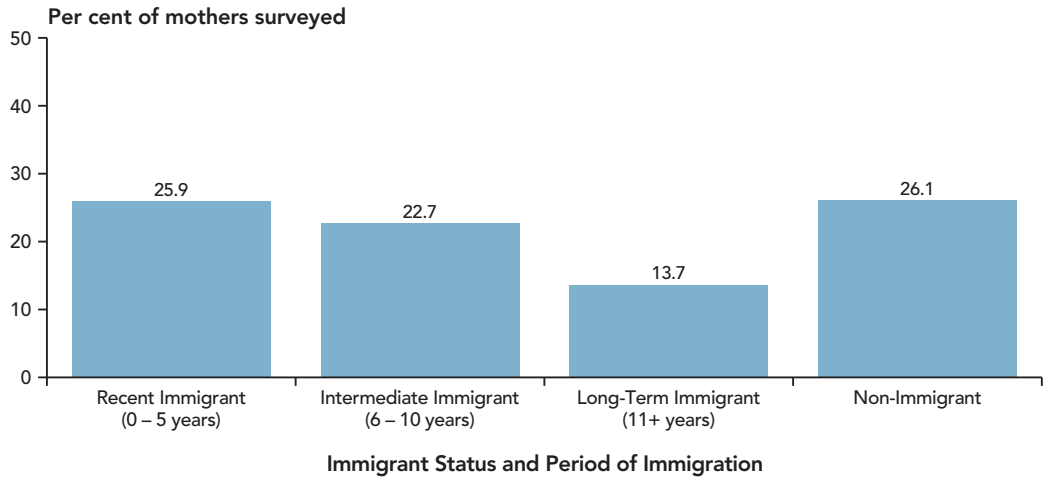
Exclusive Breastfeeding

Long-term immigrant mothers are less likely than non-immigrant mothers to breastfeed exclusively for the first six months of their child's life (Figure 4.3).

Approximately one in five Peel mothers breastfeed their babies exclusively to six months of age.

Mothers of European ethnicity are more likely than non-European mothers to breastfeed exclusively to six-months, regardless of immigrant status (data not shown).[J1]

Figure 4.3
Exclusive Breastfeeding at Six-Months Post-Partum by Immigrant Status and Period of Immigration, Peel, 2009/2010



Source: Breastfeeding Practices in the Region of Peel, 2009/2010, Peel Public Health.

Did You Know

A qualitative study conducted by Peel Public Health looked at ethnocultural factors that influence infant feeding among South Asians living in Peel. The following are some relevant findings from this work:

- Breastfeeding is highly valued by South Asian women; however, mixed feeding methods, that include formula feeding, is also common practice.
- In South Asian households, mothers–in-law may influence the decision to breastfeed and/or supplement with formula. When supporting a family's decision around infant feeding it is important to include not only the new mother, but also the elder woman of the household.[103]
- Cultural perceptions that colostrum may be unhealthy and/or that mother's milk is not enough, may influence the decision to supplement feeding – especially in the first few days after birth.
- South Asian women report that caesarean births are viewed as an illness and a common factor in early formula supplementation.[103]
- South Asian women who participated in the study perceived formula feeding as a modern, westernized and superior approach to feeding their infant, and identified strong marketing by formula companies, especially back in their homeland, to influence their decision.[103]
- South Asian mothers and their family members may believe that formula feeding will encourage the baby to sleep throughout the night and ensure the mother receives the rest she needs to recover from childbirth.[103]

chapter 5

COMMUNICABLE DISEASES

Key Messages

- Peel's immigrant population has a higher level of risk for certain infectious diseases.
- Hepatitis A, enteric illnesses and malaria are commonly acquired during travel to areas with a high incidence of these diseases.
- Canadians who were born in a country where Tuberculosis (TB) is common are at greater risk of developing active TB.
- Vaccine-preventable diseases remain a concern in Peel.

Although the burden of communicable diseases in Canada has dropped significantly in the past 50 years, it still remains a public health concern in Peel, particularly among immigrants who come from countries where certain diseases are endemic.

The Peel immigrant population is at higher risk than the Canadian-born population of acquiring infectious diseases such as tuberculosis (TB), Hepatitis B, Hepatitis C, syphilis, travel-related diseases and vaccine preventable diseases (VPDs). This is in large part due to higher exposure to these diseases in their countries of origin before immigrating. Refugees may also be at increased risk as diseases often spread in unsanitary conditions in refugee camps or war-torn areas.

Once in Canada, immigrants face other barriers to obtaining appropriate care for infectious diseases. Canadian health-care professionals may be less familiar with diseases that are rare in Canada, but active in other parts of the world, such as malaria, which may delay diagnosis and treatment. In addition, immigrants have difficulty finding health-care providers, especially those who speak their language, understand their cultural sensitivities and their specific needs as an immigrant.[104]

Overseas travel back to countries of origin to visit friends and relatives is another activity that increases the risk of disease exposure (and re-exposure) to both immigrants and their Canadian-born children.

Did You Know

The Canadian Collaboration for Immigrant and Refugee Health Guidelines have been developed to provide evidence-based guidance to health-care providers working with immigrant populations.[46] For more information, visit ccirhken.ca.

Tuberculosis

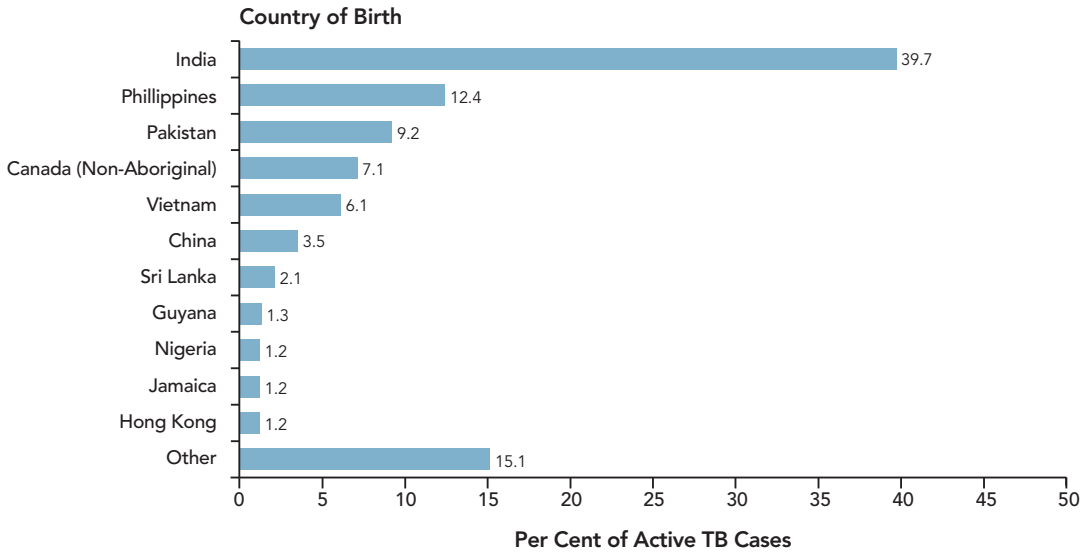
Although tuberculosis (TB) is no longer widespread in Canada, many immigrants who settle in Peel come from countries where TB is endemic. It is estimated that up to a third of the world's population is infected with *Mycobacterium tuberculosis*, the bacterium that causes TB. The bacterium is transmitted through the air, particularly with coughing, and may infect those who are frequently in close contact with someone who has active TB. While the majority of active disease occurs in the lungs, TB can develop in any part of the body.

In most cases, the bacteria are well contained and dormant, a state called latent tuberculosis infection (LTBI). However, in some cases, particularly when the immune system is compromised due to stress and medical conditions, active TB can develop.

The stress associated with the immigration process can greatly influence the progression of LTBI to active TB. This may be one reason why a significant number of active TB cases occur shortly after arrival into Canada. In 2010, 31% of immigrants in Peel with active TB were diagnosed within the first five years of arriving to Canada (2% in the first year after arriving, 29% within one to five years and 17% within six to 10 years).[K]

Living in a TB-endemic country increases the chances of exposure to TB disease and therefore of having LTBI. Individuals born in TB-endemic countries account for the majority of active TB cases in Canada, as shown in Figure 5.1. Between 2006 and 2010, 91% of individuals in Peel with active TB were born outside of Canada.[K]

Figure 5.1
Active Tuberculosis Cases by Top Countries of Birth, Peel, 2006-2010



Source: Integrated Public Health Information System (iPHIS), Peel Public Health, as of 08/02/2011.

Other reasons why the immigrant population is at a greater risk of developing active TB may include frequent travel back to their country of origin, where there is a risk for re-exposure to active TB.[105] There may also be delays in seeking health care due to culturally held stigmas about the disease and/or linguistic barriers.[106]

Peel Facts

- The first collaborative TB clinic in Peel opened in December 2010 at William Osler Health System—Brampton Civic Hospital. In this clinic, clients can see both a physician and a public health nurse during one appointment, simplifying access to medications, testing and counselling.
- Peel Public Health is the first health unit in Canada to provide directly observed therapy (DOT) through video. This innovative approach is a free service that uses a video connection to allow the health worker and client to meet virtually between two to five times per week to ensure that patients complete their course of treatment.
- Peel Public Health provides free TB medication when ordered through a doctor.

New immigrants to Ontario have a three-month waiting period before they qualify for the Ontario Health Insurance Plan (OHIP). If active TB is suspected during the waiting period, clients may be eligible for medical coverage in the TB for Uninsured Persons Program (TB-UP).

Did You Know

TB-UP is a program funded by the Ontario Ministry of Health and Long-Term Care that covers the cost of diagnostic testing (TB skin test, chest x-rays, sputum and other lab tests) and outpatient treatment (all medication, physician visits, etc.).

Persons who are not covered by a health insurance plan can be assessed and treated for suspected or active TB under this plan.

Sexually Transmitted Infections and Blood Borne Infections

Sexually Transmitted Infections (STIs) and Blood Borne Infections (BBIs) can be transmitted through: sexual activity; needle sharing; blood, tissue or organ transfusion or transplantation; tattooing and body piercing; and from mother to infant before, during or after birth.

Syphilis

Syphilis is a complicated infection caused by the organism *Treponema pallidum*. Untreated syphilis can affect the heart and brain, and cause skeletal damage.

While syphilis outbreaks in Calgary, Montreal and Toronto have been attributed to men who have sex with men and sex workers, it is important to note that infectious syphilis is not limited to these groups. For male cases reported in 2009, 45% of Peel cases reported sex with same sex partners and 18% reported having sex while travelling outside the province as a risk factor.[107]

Hepatitis B

Hepatitis B is transmitted through the exchange of bodily fluids by having unprotected sex, sharing contaminated needles and personal items, as well as from an infected mother to her baby during birth. The clinical presentation of Hepatitis B disease ranges from asymptomatic to severe acute liver disease. It is the leading cause of liver cancer worldwide. Some infected people become carriers and can infect others.

Immigrants are at higher risk of having Hepatitis B due to having lived in endemic countries, not having been vaccinated, living with a carrier, and visiting their countries of origin leading to potential re-exposures. Immigrants from Africa and South Asia represent the largest group of Hepatitis B virus carriers in Canada.[109] In Peel, between 2006 and 2010, approximately 40% of acute Hepatitis B cases were travel-related, both recreational travel and back to country of origin.[K]

Hepatitis C

The Hepatitis C virus (HCV) is a blood-borne virus that attacks the liver. It is transmitted through contact with blood from an infected individual; for example, through the sharing of substance use equipment, the sharing of personal hygiene items, and, to a much lesser extent through sexual activities. It is a major cause of liver failure and cancer.

The dominant risk factor for HCV is recreational injection drug use, followed by travel to or previous residence in a region where HCV is endemic.[110]

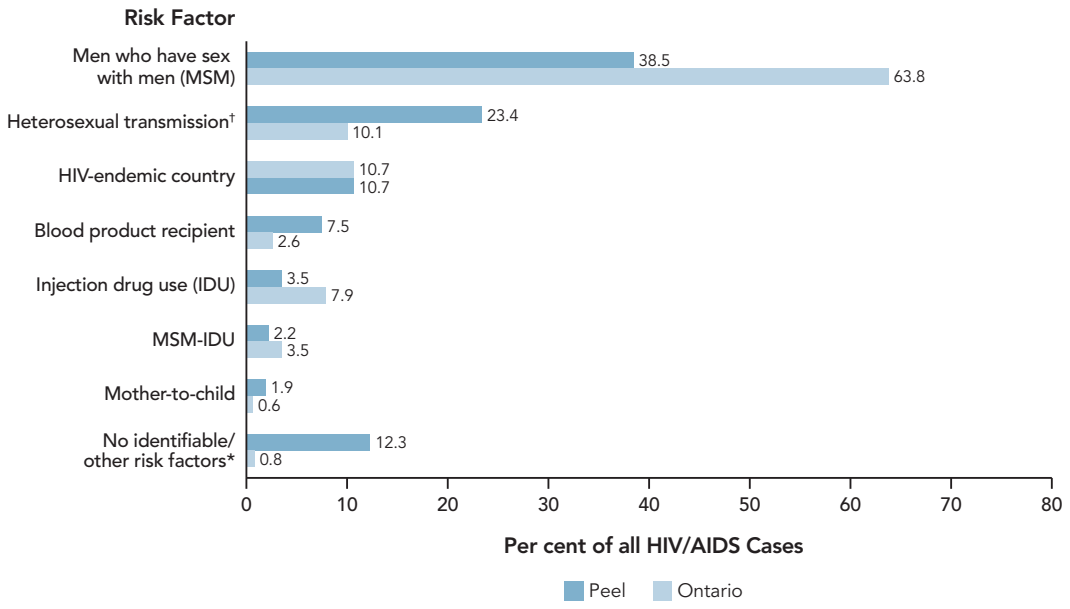
HIV/AIDS

The human immunodeficiency virus (HIV) attacks the immune system leaving the infected individual vulnerable to infections. Acquired immunodeficiency syndrome (AIDS) occurs when HIV has destroyed a significant amount of CD4 cells and the body is no longer able to fight infections. HIV is transmitted through sexual activity, and other forms of contact with blood and/or body fluid from an infected person.

In Peel, between 1985 and 2006, 39% of HIV/AIDS cases were among men who have sex with men (MSM), while 23% of cases were among heterosexuals. In contrast, 64% of cases in Ontario were among MSM and 10% of cases were among heterosexuals (Figure 5.2). Heterosexual contact is a more significant risk factor in Peel compared to Ontario. There are a few reasons for the difference observed. First, there is a smaller MSM community in Peel compared to larger cities, like Toronto. Second, new immigrants comprise a significant percentage of the population in Peel. Often such individuals originate from HIV-endemic countries where heterosexual transmission plays a significant role.

In Peel, origin from an HIV-endemic country is the third most common risk factor at 11% and is the second highest risk factor for Ontario also at 11% (Figure 5.2).

Figure 5.2
Risk Factors for HIV/AIDS, Peel and Ontario, 1985-2006 Combined



Notes: Per cents based on 916 HIV/AIDS cases in Peel between 1985 and 2006 and 26,461 HIV infections in Ontario between 1985 and 2005.
Persons with no risk factor reported (i.e. left blank) were classified as unknown and removed from the analysis.
85 HIV/AIDS cases were classified as unknown in Peel between 1985 and 2006.
† Heterosexual transmission includes low-risk and high-risk heterosexual exposure combined. High-risk is defined as having sex with a partner who belongs to a high risk group (e.g., HIV positive, bisexual, received blood products, IDU, etc.) while low-risk exposure is defined as engaging in heterosexual activity with partner's risks unknown.
Sources: Ontario HIV data are from the Ontario HIV Laboratory as reported in Remis RS, Swantee C, Schiedel L, Fikre M, Liu J. Report on HIV/AIDS in Ontario 2005. Ontario Ministry of Health and Long-Term Care, March 2007.
* No identifiable/other risk factors includes only those listed as such in iPHIS, while the "other risk factor" category includes those risk factors not captured elsewhere (e.g., tattoo, acupuncture, body piercing, and occupational exposure). These may have been classified differently in the Ontario data.
Source: Peel data from the Integrated Public Health Information System (iPHIS), Peel Public Health, as of 06/26/2007.

Being from an HIV-endemic country as a risk factor is particularly evident in women. In 2005, women from HIV-endemic countries accounted for just over half of all new HIV diagnoses among Ontario women.[111]

Travel: Hepatitis A, Enteric Illnesses and Malaria

Hepatitis A, enteric illnesses and malaria are acute illnesses that are commonly acquired during travel to areas with a high incidence of these diseases.

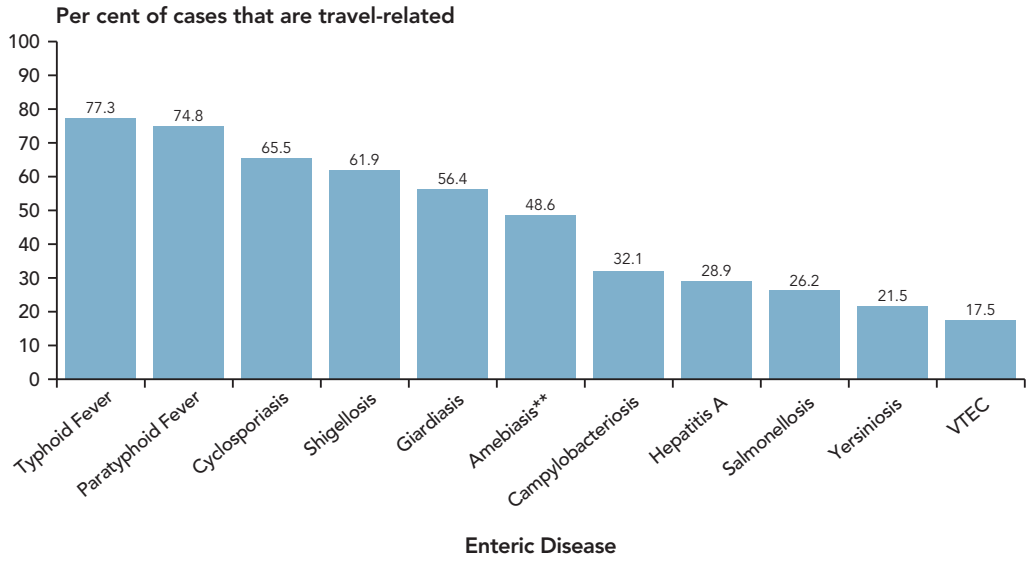
Hepatitis A

Hepatitis A is a virus that affects the liver and is transmitted by consumption of contaminated food or water, or through direct contact with another infected person. Symptoms of this infection can include anorexia, nausea, fatigue, fever and jaundice. Hepatitis A may rarely lead to liver failure. In many countries in which hepatitis A is common (most of which are developing countries), poor sanitation, inadequate medical care and overcrowding are the primary causes of transmission.

Enteric Illness

Enteric illnesses are infections of the digestive system which can lead to symptoms such as diarrhea, vomiting, fever and abdominal pain. Common travel-related enteric illnesses reported in Peel include typhoid and paratyphoid fever, cyclosporiasis and shigellosis. They are transmitted by contaminated food or water, and contact with animals or infected people. In 2010, nearly half (46%) of all typhoid and paratyphoid fever cases in Ontario occurred in Peel, the vast majority of which were travel-related (Figure 5.3).

Figure 5.3
Proportion of Selected Enteric Diseases that are Travel-Related, Peel, 2006-2010 Combined



* Includes cases with "travel" entered Exposure Setting and/or "travel" in the exposure name.
** Case definition change for Amebiasis in 2009. The creation of a "probable" case has resulted in fewer "confirmed" cases.
† *Verotoxigenic escherichia coli*
Source: Integrated Public Health Information System (iPHIS), Peel Public Health, as of 06/24/2011.

Travelling back to their country of origin puts many immigrants at higher risk of acquiring Hepatitis A and enteric illnesses. Immigrants who are visiting friends and relatives (VFRs) are at greater risk than Canadian-born travellers because they may not recognize or consider health risks associated with travel to their countries of origin. Some examples of these risks include:

- residing with family, making it harder to follow advice like "boil it, cook it, peel it or forget it";
- travelling with children, who are at higher risk of acquiring these diseases; and
- staying for extended periods of time, increasing the likelihood of intimate contact with local populations.[104]

Malaria

Malaria is a disease spread by mosquitoes that can result in death. Malaria transmission does not occur in Canada due to the cooler climate. All cases diagnosed in Canada are acquired through travel to endemic countries. The incidence rates of malaria in Peel have remained stable between 2006 and 2010;[K] however, Peel's rate was twice the rate in Ontario during this period of time (data not shown).

Many of the immigrants living in Peel come from countries where malaria is common (see Chapter 2). Travel back to these countries is one reason why immigrants who are VFRs make up a considerable proportion of malaria cases. VFRs are at greater risk of acquiring malaria for many reasons, including[112]:

- visiting malaria-endemic areas for long periods of time;
- visiting rural communities where malaria is readily transmitted; and
- believing incorrectly that they (and their Canadian-born children) have immunity to the infectious diseases in their country of origin.

Last-minute travel plans (such as visiting sick relatives or attending weddings or funerals) may mean there is no time to see a doctor for pre-travel medical advice.[112]

Vaccine Preventable Diseases

The incidence of vaccine preventable diseases (VPDs) such as measles, mumps, polio, rubella and pertussis, has fallen in Canada with the introduction of childhood vaccination programs. However, with the exception of polio, this is not true for other parts of the world.

VPDs still occur in Peel in unimmunized populations. Foreign-born adult immigrants may not have immunity to VPDs (e.g., rubella and mumps) as childhood vaccination programs were not introduced in developing countries until the late 1970s. Even after arriving in Canada, immigrants may find it difficult to have all their immunizations up-to-date due to: language barriers, incomplete immunizations and records, different vaccine schedules in other countries, and unreliable documentation.[104]

Babies and young children of immigrants are at high risk of certain VPDs when they travel with their parents to their country of origin (where VPDs are endemic) prior to receiving their vaccinations.

Peel Facts

In Peel, Routine Immunization Clinics (RICs) are available to children of newcomers who require immunization in order to register for licensed child-care centres or schools.

chapter 6

CHRONIC DISEASES

Key Messages

- Cancer screening varies by immigrant status and ethnicity in Peel.
- The prevalence of common risk factors for heart disease is lower among immigrants in Peel, but some groups are at higher risk of developing cardiovascular disease.
- The prevalence of diabetes differs by ethnicity in Peel. While there is variation in diabetes rates among immigrants from different regions of the world, there is also variation within subgroups by country of origin.
- Ethnic-specific waist circumference guidelines are recommended due to ethnocultural differences between body fat distribution and risk for chronic disease.
- In Peel, the prevalence of overweight and obesity varies by ethnicity and sex.
- Females, refugees and economic class immigrants are at greater risk of emotional problems.

Chronic diseases are health conditions that generally progress slowly and are long in duration. Many chronic diseases are preventable and are caused by risk factors, such as obesity, poor nutrition and tobacco use (see Chapter 7). This chapter will focus on the following chronic diseases: cancer; heart disease; stroke; diabetes; and overweight and obesity.

In Canada, the prevalence of self-reported chronic conditions are usually lower for immigrants compared to non-immigrants; however, there are exceptions as in the case of diabetes. In addition, the prevalence of chronic diseases, such as some cancers and heart disease, increases among immigrants the longer they are in Canada.[6,113]

Cancer

While cancer can develop at any age, the risk of cancer increases as we age. In Ontario, approximately 40% of females and 45% of males will develop cancer during their lifetime – more than 400,000 Ontarians will be living with or will have survived cancer by 2015.[114] This section will focus on the cancers that can be identified through screening programs (breast, cervical and colorectal cancer) and cancers that are relevant among some ethnicities, such as prostate, liver and stomach cancer.

Lung, prostate, breast and colorectal cancer make up 51% of all cancers in Peel.

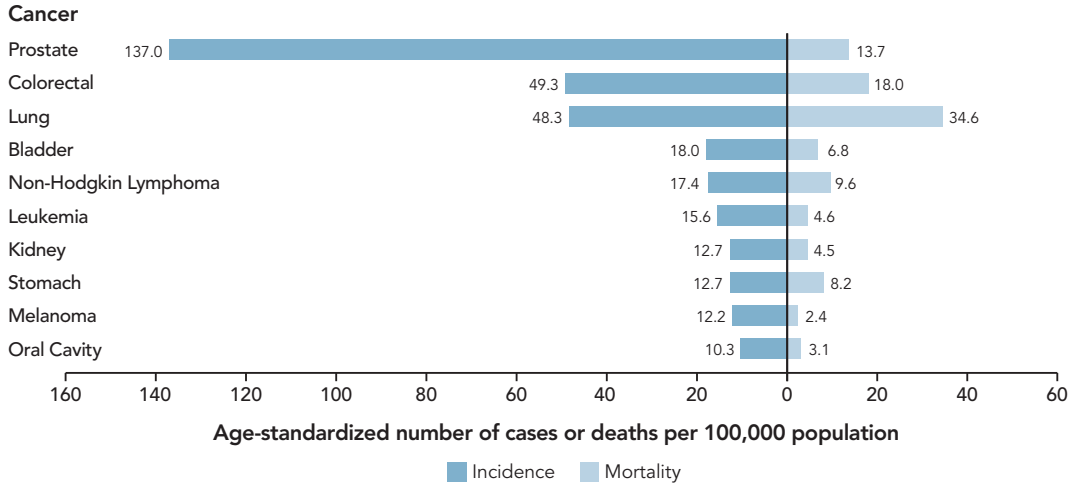
Cancer remains a leading cause of premature death in Ontario.[114] In 2006, cancer accounted for 196 deaths per 100,000 males and 136 per 100,000 females in Ontario.[115]

Definition

Incidence **refers to the number of new events (e.g., new cases of a disease) in a defined population within a specified period of time.[116]**

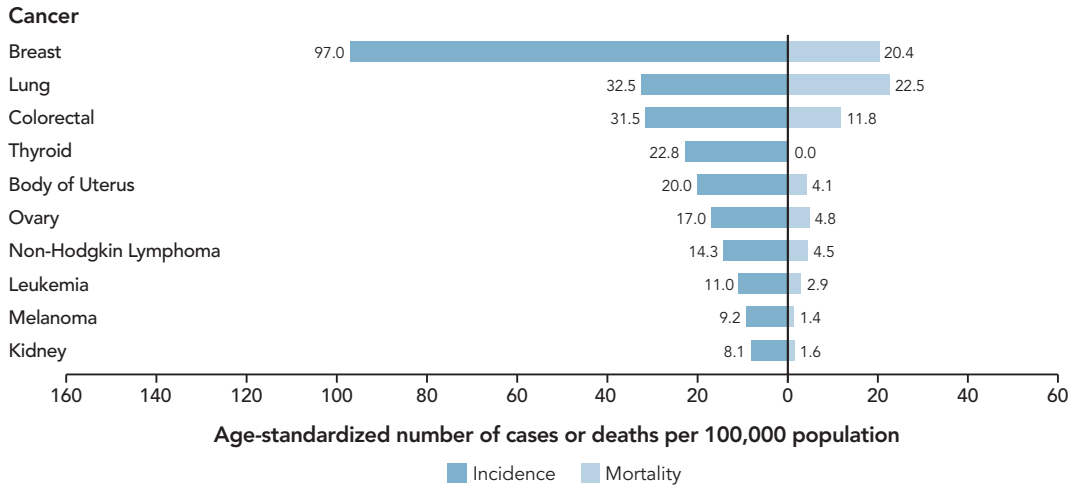
In Peel, the cancers with the highest incidence and mortality among men are prostate, colorectal and lung (Figure 6.1); and among women: breast, lung and colorectal (Figure 6.2). The age-standardized mortality rates for these cancers are lower among immigrants compared to non-immigrants.[N, A3]

Figure 6.1
Top 10 Causes of New Cases of Cancer and Cancer Mortality, Males, Peel, 2007



Source: Cancer Incidence and Mortaltiy 2007, Cancer Care Ontario – SEER*Stat Release 8 – OCRIS (May/June 2010), released February 2011.

Figure 6.2
Top 10 Causes of New Cases of Cancer and Cancer Mortality, Females, Peel, 2007



Source: Ontario Cancer Incidence and Mortality 2007, Cancer Care Ontario – SEER*Stat Release 8 – OCRIS (May/June 2010), released February 2011.

Cancer Screening

The implementation of enhanced screening programs has resulted in earlier detection and increased survival rates for certain forms of cancer. Despite this, participation in screening programs remains low amongst some immigrant populations. Low rates of screening have been associated with a host of factors such as:

- being a recent immigrant;
- not having access to a primary-care physician;
- living in rural areas;
- having low levels of education;
- earning a low income; and
- being born in certain countries (e.g., born in Asia, South America or Africa). [21, 117-121]

Breast Cancer

The 2007 incidence rate of breast cancer in Peel was 97.0 per 100,000 population of females, this means that Peel had 97 new cases of breast cancer for every 100,000 women.[M] There are no census tracts (CTs) in Peel that have an excess of new cases of breast cancer after adjusting for the influences of other related factors such as age, income, education, immigration and visible minority status.[122]

Definition

Census tracts (CTs) **are small, relatively stable geographic areas that usually have a population of 2,500 to 8,000.[123] Census tract boundaries are usually defined by physical features, such as roads, streams and railroad tracks.**

In 2006, Peel immigrants had a lower mortality rate per 100,000 from breast cancer compared to non-immigrants (18.0 versus 27.3).[N, A3]

Breast Cancer Screening

Did You Know

Ontario Breast Cancer Screening Program

Through the Ontario Breast Screening Program (OBSP), women aged 50 to 69 years (and as young as 30 years of age for high-risk women) are eligible to be screened for breast cancer.

- **Women aged 50 to 69 years should be screened every two years.**
- **Women between 30 to 69 years at high risk should be screened every year through the OBSP.[124]**

Canadian women are more likely to have had a mammogram if they:

- are married;
- have higher household income;
- have higher education attainment; and/or
- do not smoke.[125, 126]

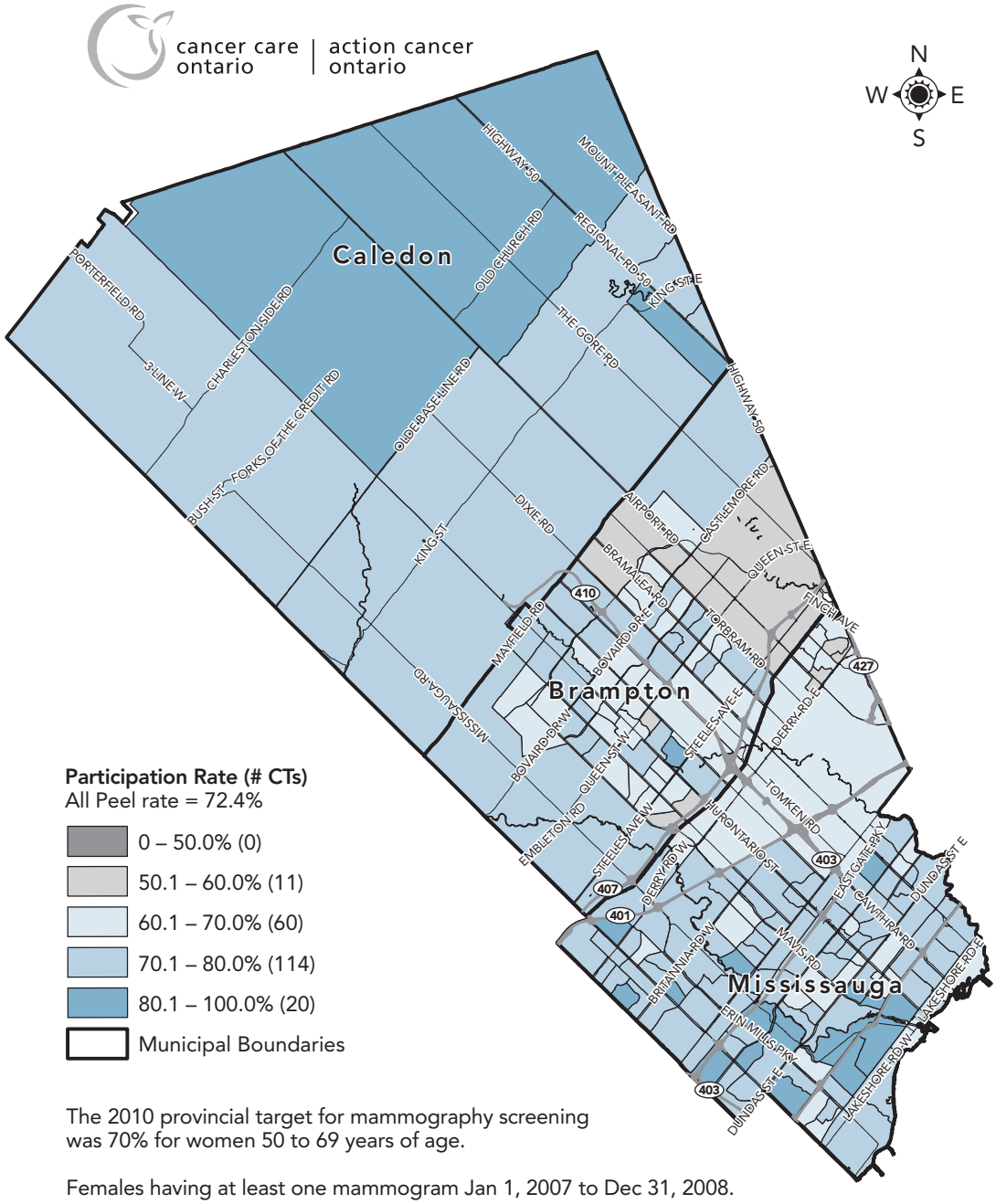
Among immigrant women in Canada, language is associated with getting a mammogram; specifically, having access to translated and culturally appropriate information or being able to speak one of the two official languages in Canada.[125, 127]

Asian (Korean, Filipino, Japanese, Chinese, South Asian, Southeast Asian, Arab and West Asian) immigrant women aged 50 to 69 years report a lower rate of mammogram screening compared to their Canadian-born counterparts.[125]

Within Peel, Caledon has mammography participation rates at or above the 2010 provincial target of 70%. While there are some census tracts within Brampton and Mississauga that are meeting the provincial target for mammography, others are 10 to 20% below the provincial target (Map 6.1).

Map 6.1

Mammography Participation Rate among Women aged 50–69 Years by Census Tract (CT), Peel, 2007–2008



The 2010 provincial target for mammography screening was 70% for women 50 to 69 years of age.

Females having at least one mammogram Jan 1, 2007 to Dec 31, 2008.

Data sources: OHIP billing for screening data; 2007 Registered Persons Database (RPDB) for population.

This study was supported by the Institute for Clinical Evaluative Sciences (ICES), which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC). The opinions, results and conclusions reported are those of the authors and are independent from the funding sources. No endorsement by ICES or the Ontario MOHLTC is intended or should be inferred.

Definition

The data sources used in this section of the report use the following definition to describe immigrant status.

Recent immigrant refers to those who have been in Canada for 10 years or less.

Long-term immigrant refers to those who have been in Canada for 11 years or longer.

Non-immigrant refers to the Canadian-born population.

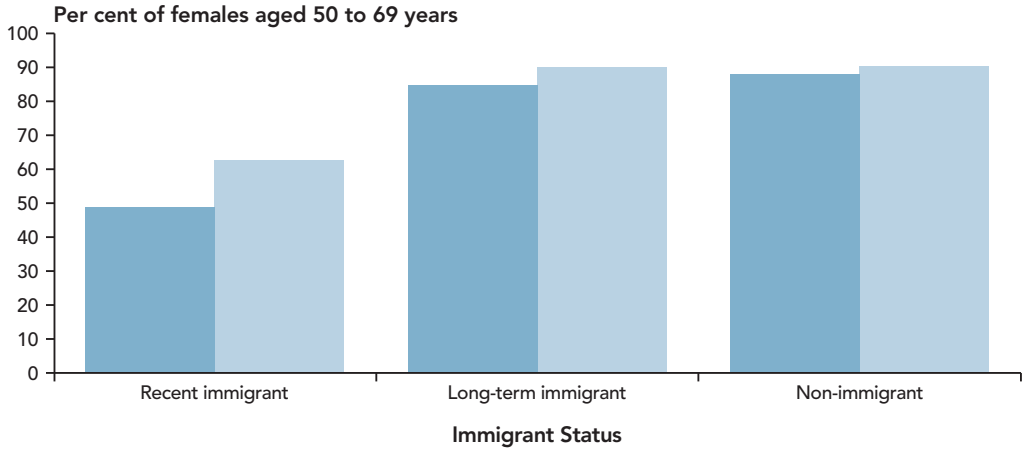
Definition

Odds - The ratio of the probability of occurrence of an event to that of non-occurrence. For example, if 60 women have a mammogram and 40 do not, then the odds among these 100 women in favour of having a mammogram are 60:40, or 1.5; this may be contrasted with a probability that these women will have a mammogram which is 60/100 or 0.6.[116]

In Peel, in 2003, 2005 and 2007/2008 combined, the proportion of women who ever had a mammogram varied by immigrant status.[D2, D4] Recent immigrant women aged 50 to 69 years are less likely than long-term immigrants and non-immigrants to have ever had a mammogram (Figure 6.3).[D2, D3, D4]

Further analysis of Peel data demonstrated a positive relationship between being a long-term immigrant and mammography screening participation rates in 2007/2008.

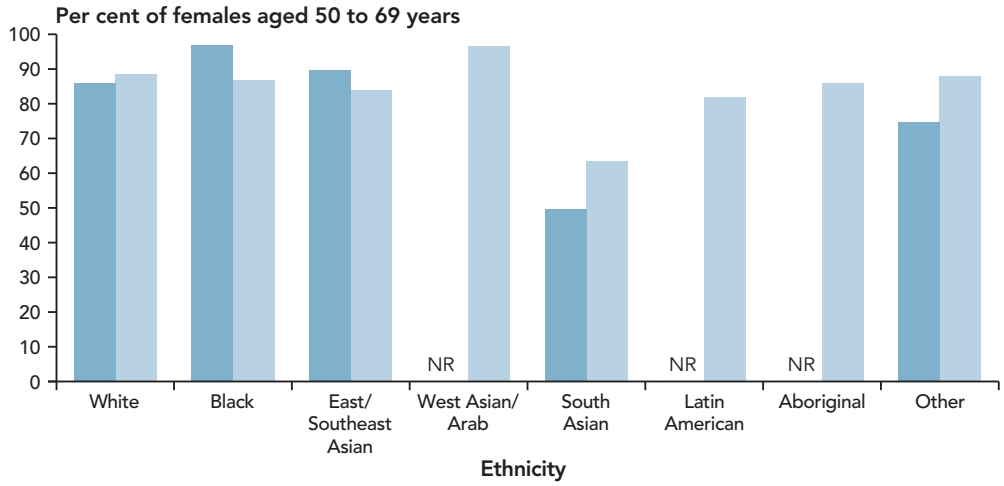
Figure 6.3
Ever Had a Mammogram by Immigrant Status, Peel and Ontario, 2003, 2005, 2007/2008 Combined



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	48.6* (29.3 – 68.4)	84.8 (78.1 – 89.7)	87.9 (82.2 – 91.9)
Ontario % (95% CI)	62.7 (53.1 – 71.5)	89.9 (88.4 – 91.3)	90.3 (89.5 – 91.0)

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2003, 2005, 2007/2008, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Figure 6.4
Ever Had a Mammogram by Ethnicity, Peel and Ontario, 2003, 2005, 2007/2008 Combined



	White	Black	East/ Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Peel % (95% CI)	88.0 (83.8 – 91.2)	99.2 (94.3 – 99.9)	91.8 (80.7 – 96.7)	NR	50.7 (36.1 – 65.3)	NR	NR	76.4* (38.2 – 94.4)
Ontario % (95% CI)	90.5 (89.9 – 91.2)	88.8 (80.7 – 93.8)	85.9 (80.4 – 90.1)	98.7 (94.2 – 99.7)	64.8 (55.4 – 73.2)	83.8 (67.2 – 92.9)	88.0 (82.3 – 92.0)	90.1 (82.1 – 94.8)

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2003, 2005, 2007/2008, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care

Specifically, the odds of mammography screening increased by 1% for every 1% increase within Peel CTs of immigrants who have been in Canada for 11 years or more (long-term immigrants).[122]

Mammography screening also varies by ethnicity where South Asian women in Peel are least likely to have ever had a mammogram compared to women of other ethnicities (Figure 6.4). This is further substantiated by additional analyses in which a negative relationship was found by ethnicity where the odds of mammography screening decreased by 1% for every 1% increase within Peel CTs of individuals who identified as being South Asian.[122]

Did You Know

Peel Public Health has produced a report entitled ***Cancer Incidence and Screening, 2004–2008: Peel Region Summary Report***. The report describes the key findings of an ecological regression study in Peel to explain the contribution of both individual and contextual factors to total variation in cancer incidence and screening participation rates across Peel at the census tract level. The report is available at: peelregion.ca/health/reports.

Cervical Cancer

In 2007, the cervical cancer incidence rate in Peel was 6.5 per 100,000 population of females. This means that Peel had 6.5 new cases of cervical cancer for every 100,000 women.[M] There are no CTs in Peel that have a significant excess of new cases of cervical cancer after adjusting for the influences of related factors (age, sex, income, education attainment, period of immigration and visible minority status).[122]

There is no significant difference in the age-standardized mortality rate from cervical cancer by immigrant status in Peel.[N, A3]

Cervical Cancer Screening

Did You Know

Ontario Cervical Screening Program

Starting at the age of 21 years, cervical cancer screening is recommended for all women who are or have ever been sexually active.

- Cervical cancer screening should be delayed for women who are not sexually active by 21 years of age, until they become sexually active.
- There is no evidence to support screening women under 21 years of age, regardless of their sexual history.
- Based on the latest clinical evidence, cervical cancer screening every three years is effective.
- Pap tests can stop at 70 years of age in women who have had at least three normal tests in the previous 10 years.[124]

Pap tests can detect changes in cells and precancerous lesions. Regular Pap tests can help detect cancer in sexually active women between 21 and 70 years of age. In addition, the human papillomavirus (HPV) vaccine can prevent almost 100% of cervical cancers before they occur.[124]

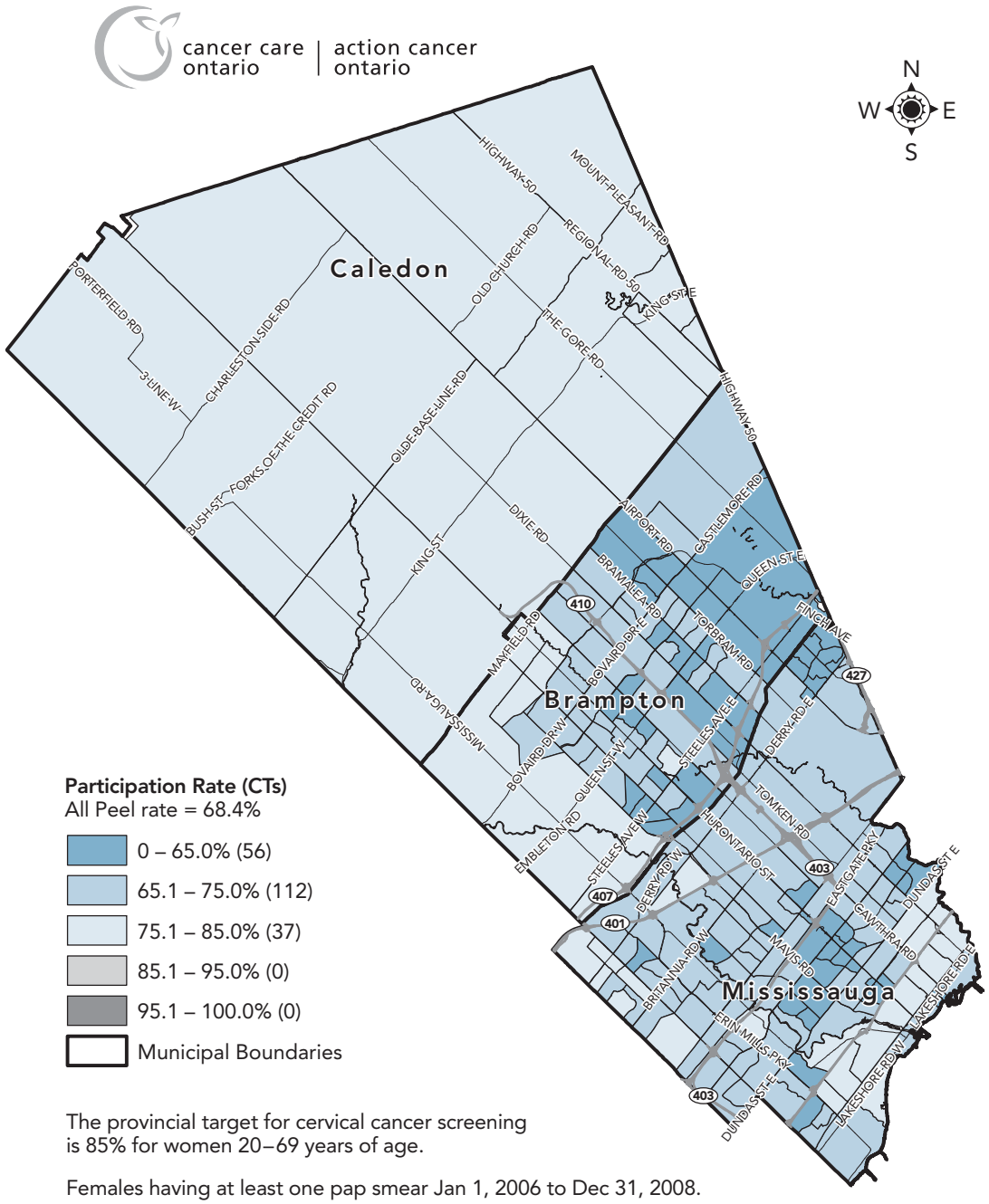
Cervical cancer screening is low among recent immigrants[129, 130] and among women of Asian background (i.e., South Asian, Southeast Asian, Chinese and Filipino).[129-131]

Map 6.2 indicates the uptake of Pap test utilization within Peel:[122]

- Caledon is the only municipality with all CTs (11 of 11) at or near the 2010 provincial screening target rate of 85%.
- Only 10% of the CTs in Brampton (7 of 69) have Pap test participation rates at or above the 2010 provincial target.
- In Mississauga, most CTs had participation rates below the 2010 provincial target.

Map 6.2

**Pap Smear Participation Rate among Women aged 20–69 Years by Census Tract (CT)
Peel, 2006–2008**



The provincial target for cervical cancer screening is 85% for women 20–69 years of age.

Females having at least one pap smear Jan 1, 2006 to Dec 31, 2008.

Data sources: OHIP billing file for screening data; 2007 Registered Persons Database (RPDB) for population excluding women having a hysterectomy.

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In Peel, cervical cancer screening varies by immigrant status and ethnicity. Specifically, with every 1% increase in the proportion of recent immigrants by CTs (arrived within the past 10 years) the odds of Pap test screening declined by 1%. Similarly, the odds of Pap test screening between 2006 and 2008 decreased by 1% for every 1% increase within Peel CTs of individuals who identified as South Asian.[122]

Colorectal Cancer

In 2007, the incidence rate of colorectal cancer in Peel was 39.7 per 100,000 population; this means that Peel had 39.7 new cases of colorectal cancer for every 100,000 persons.[M] While there is some variation by CT of colorectal cancer incidence, there are no CTs in Peel that have a significant excess of new cases for either males or females after adjusting for the influences of age, income, education, immigration and visible minority status.[122]

Age-standardized mortality rates per 100,000 population indicate that in Peel immigrants have a lower mortality rate from colorectal cancer compared to non-immigrants (14.2 versus 23.1).[N, A3]

Did You Know

The ColonCancerCheck Program

- Adults over the age of 50 years should be screened with a fecal occult blood test (FOBT) once every two years.[122]
- A colonoscopy is recommended once every five years for those who have a family history of colorectal cancer.[122]
- The ColonCancerCheck program is a colorectal cancer screening program targeted at all asymptomatic, average-risk men and women over the age of 50 years. If colorectal cancer is caught early enough it can improve chances of survival by 90%.[132]

In Peel, 30% of females and 25% of males have been screened using the FOBT. A positive relationship was found between being a long-term immigrant and FOBT screening, as well as both a positive and a negative relationship between ethnicity (for females) and FOBT screening.[122]

More specifically, the analysis found the odds of FOBT screening increased with being a:

- Long-term immigrant – the odds of FOBT screening for males and females increased by 1% for every 1% increase in the population of immigrants who had been in Canada for 11 years or more.
- Black visible minority – for females, the odds of FOBT increased for every 1% increase within Peel CTs of women who identified as Black visible minority.

A decreased odds of FOBT screening was associated with being a:

- South Asian visible minority – the odds of FOBT screening in females decreased by 1% for every 1% increase within Peel CTs of women who identified as South Asian.[122]

A majority of the CTs within Peel are below the provincial target for FOBT screening.

Maps 6.3 and 6.4 indicate the uptake of FOBT among males and females in Peel:

Among Peel males:

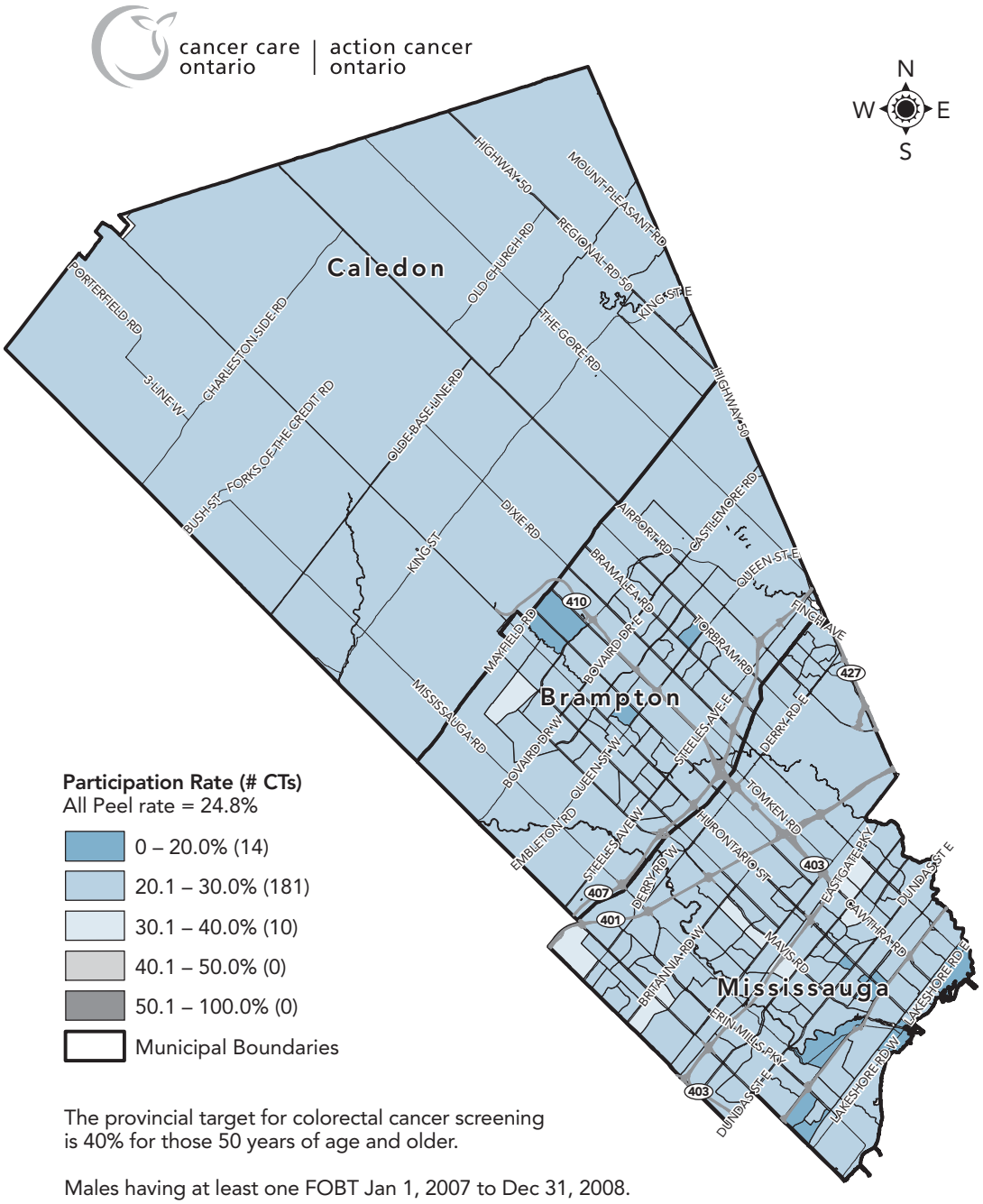
- 93% of Brampton CTs had FOBT rates 10-20% below the provincial target participation rate of 40%.
- All of Caledon's CTs had rates 10-20% below the provincial target.
- 85% of Mississauga CTs had rates 10-20% below the provincial target.

Among Peel females:

- 78% of Brampton CTs had FOBT participation rates 10-20% below the provincial target participation rate of 40%.
- 64% of Caledon CTs had FOBT participation rates 10-20% below the provincial target.
- 28% of Mississauga CTs had FOBT participation rates 10-20% below the provincial target.[122]

Map 6.3

Fecal Occult Blood Tests (FOBTs) among Men aged 50–74 Years by Census Tract (CT), Peel, 2007–2008



The provincial target for colorectal cancer screening is 40% for those 50 years of age and older.

Males having at least one FOBT Jan 1, 2007 to Dec 31, 2008.

Data sources: OHIP billing for screening data; 2007 Registered Persons Database (RPDB) for population.

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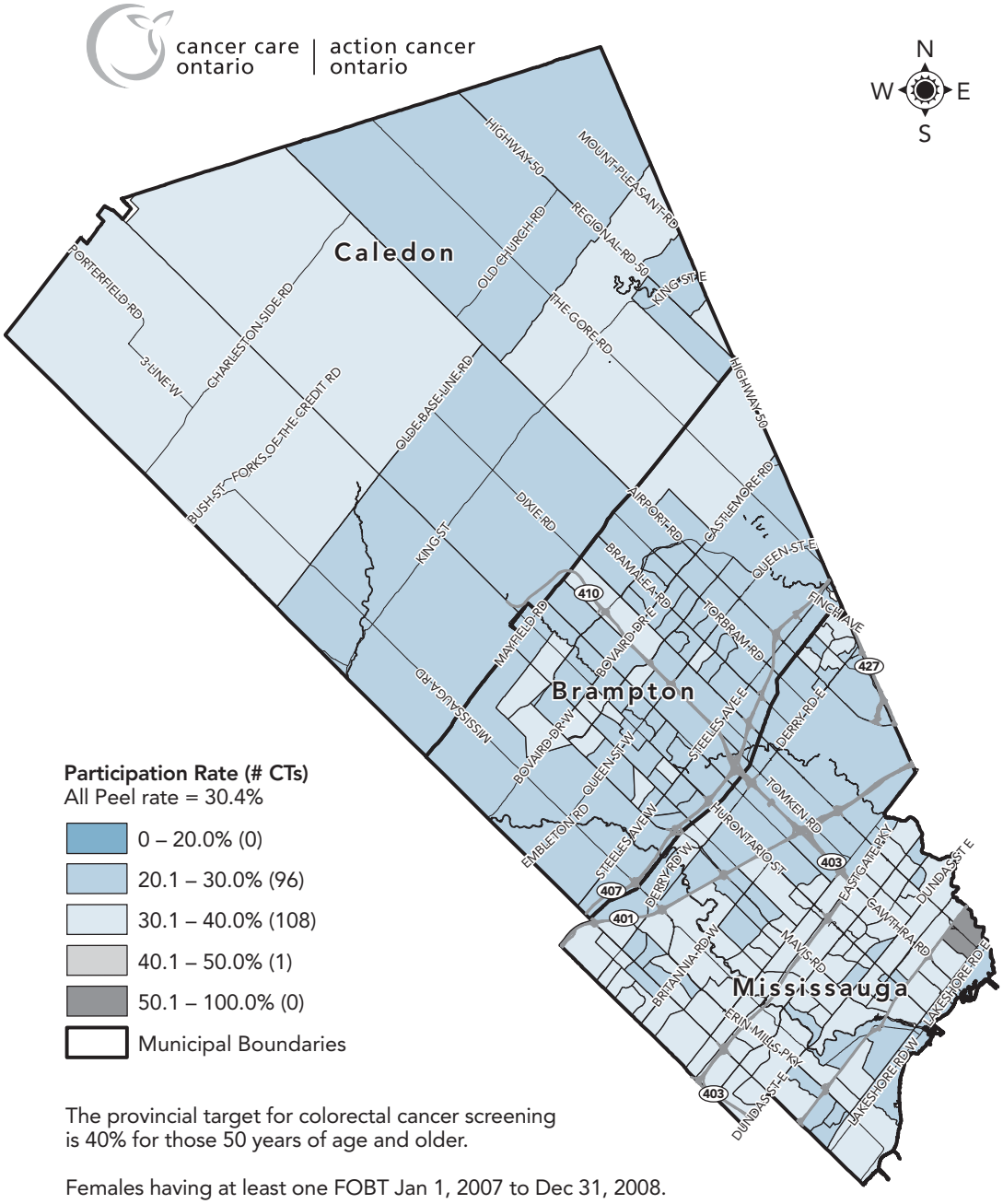
Map 6.4
Fecal Occult Blood Tests (FOBTs) among Women aged 50–74 Years by Census Tract (CT), Peel, 2007–2008



The provincial target for colorectal cancer screening is 40% for those 50 years of age and older.

Females having at least one FOBT Jan 1, 2007 to Dec 31, 2008.

Data sources: OHIP billing for screening data; 2007 Registered Persons Database (RPDB) for population.

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Did You Know

The ***Peel Cancer Screening Study*** is currently in its second phase (September 2011 to August 2013) in which research-tested interventions are being selected and adapated to increase cancer screening among South Asians in the region.

The number of partnerships between the researchers and stakeholder organizations has grown from three to 13 through participatory research activities, such as the initial concept mapping exercise that identified barriers to cancer screening and a full-day knowledge exchange meeting that discussed plans to establish an advisory group. The purpose of the 13-member advisory group is to:

- Select research-tested strategies to address community-identified barriers to the uptake of mammography, Pap tests and fecal occult blood tests among South Asians in Peel.
- Adapt the intervention strategies to fit with local resources and expertise.
- Conduct a formative evaluation to assess the reach, acceptability and feasibility of the strategies and organizational relationship.

Through use of geographic information systems, organizational network analysis, logic models and ongoing knowledge exchange, the advisory group is developing a shared understanding of the local resources to implement the research-tested interventions and identifying the gaps in resources that need to be filled through training, skill-building, and collaboration. The advisory group has identified the target area for intervention activities and has selected peer-led education as an activity that will be implemented. Pre-testing of messaging for the education materials with residents in the target areas will take place in the fall 2012.

Prostate Cancer

In 2007, the incidence rate of prostate cancer in Peel was 137.0 per 100,000 male population; this means that Peel had 137 new cases of prostate cancer for every 100,000 males.[M] After controlling for age, income, education, immigration and visible minority status, there are no CTs in Peel that have an excess of new cases of prostate cancer.[122]

In Peel the prostate cancer mortality rate among immigrants is 16.6 deaths per 100,000 and 27.0 deaths per 100,000 among non-immigrants.[N, A3]

In Ontario, the incidence of prostate cancer peaked in 1993, rapidly declined by 1995 and has been steadily increasing since about 1997.[133] This increase may be explained by increased PSA (prostate-specific antigen) screening in males and early detection.

Prostate cancer can be tested through the PSA blood test; however, it is only recommended among symptomatic males. Several reviewing bodies, such as the Ontario Ministry of Health and Long-Term Care (2002), the U.S. Preventive Services Task Force (2002) and the Canadian Task Force on Preventive Health Care (1994), have concluded there is no scientific evidence that suggests population-wide screening would save lives or improve survival rates.

In fact, screening in asymptomatic males may result in a false diagnosis, which may create unnecessary anxiety. In addition, the PSA test may also miss some individuals who do have cancer, resulting in a false sense of security about their health.[134, 135]

Did You Know

Prostate Cancer in Black Males

There is an increased prevalence of prostate cancer among black males. Although survival rates are improving,[115] U.S. data suggest that black males experience higher rates of mortality.[136] Unfortunately, we lack comparable data for Ontario or Canada.

Stomach Cancer

Stomach cancer is one of the most common cancers worldwide, with 60% of cases found in developing countries.[137] Globally, the highest incidence rates of stomach cancer occur in Eastern Asia, Eastern Europe and South America, while the lowest rates are seen in North America and many parts of Africa.[138] Regional differences in stomach cancer in part reflect differences in dietary patterns and the prevalence of *Helicobacter pylori* infection.[139]

Stomach cancer has been associated with:

- living in an area that has nitrates in the drinking water,
- eating pickled and cured foods; and
- having diets high in salt and carbohydrates.[140-142]

In low-income countries, stomach cancer has also been associated with:

- poor sanitation;
- low socioeconomic status; and
- crowded living conditions.[143, 144]

In 2007, the incidence rate of stomach cancer in Peel was 9.3 per 100,000 population, which was higher than that for Ontario (7.3 per 100,000).[M]

In Peel, between 2005 and 2007, there was no difference in age-standardized mortality rates of stomach cancer by immigrant status.[N, A3]

Liver Cancer

Liver cancer is more common among men and women in Western Pacific Countries (e.g., China, Australia, Phillips, Samoa).[145] Viral hepatitis B (HBV) and C (HCV) account for 78% of liver cancer cases.[146]

Rates of liver cancer in men are higher in areas of Ontario with large immigrant populations (specifically from India, China, the Philippines, Pakistan and Sri Lanka), with the highest rates being observed in Toronto, Peel and York. It is speculated that these immigrant men are exposed to risk factors in their homeland and their disease later manifests after they have arrived in Canada.[148]

Higher rates of liver cancer are common among Northeast and Southeast Asian populations as compared to other ethnic groups. This may be associated with the consumption of aflatoxin, a fungus found in specific cereals, nuts, oils and spices in regions of South-East and North-East Asia.[149] Alcohol use is also associated with liver cancer.[150] For more information about alcohol use, refer to Chapter 7.

In 2007, the incidence rate of liver cancer in Peel was 4.5 per 100,000 population, which was slightly higher than that for Ontario (3.9 per 100,000).[M]

In Canada, mortality rates from liver cancer among both sexes are on the rise.[141] In Peel, there is no difference in mortality rates between immigrants and non-immigrants.[N, A3]

Heart Disease and Stroke

Cardiovascular diseases are the most common cause of mortality in Canada and a cause of substantial disability.[151, 152] Worldwide, over 80% of cardiovascular disease deaths take place in low- and middle-income countries, almost equally in both men and women, with an elevated risk for women after menopause. While ischaemic heart disease and stroke are both preventable cardiovascular conditions, they still account for a large percentage of deaths worldwide.[153]

Did You Know

There are six types of cardiovascular disease:

Ischemic heart disease (heart attack) refers to a lack of oxygen to the heart. This is caused by a partial blockage of one or more of the coronary arteries resulting in chest pain (angina) or a heart attack.

Cerebrovascular disease (stroke) occurs due to a lack of circulation of blood to the brain due to a blockage in the vessels. A stroke can result in long-term health effects, such as paralysis.

Peripheral vascular disease is caused by a build-up of fatty material within the arteries, called atherosclerosis. This can lead to arteries becoming blocked, weakened or narrowed, which reduces blood flow to the body.

Heart failure occurs when the heart can no longer pump blood to the rest of the body. Heart failure is a chronic condition, but can also occur suddenly, often caused by coronary artery disease.

Rheumatic heart disease refers to chronic heart valve damage as a result of rheumatic fever and can lead to heart failure.

Congenital heart disease is caused by a problem with the structure and function of the heart as a result of abnormal heart development before birth.

In Ontario, long-term immigrants are more likely than recent immigrants and non-immigrants to report having heart disease.

By the age of 70 years, at least one in four Canadian men and one in five women will report having heart disease.[154] In addition

to genetics and age, increased risk for heart disease has been linked to the following modifiable risk factors:[153-155]

- using tobacco;
- being physically inactive;
- misusing alcohol;
- being overweight; and
- having other chronic health conditions, such as:
  - high blood pressure,
  - high blood cholesterol, and
  - diabetes.

Table 6.1 displays the prevalence of selected heart disease risk factors for recent immigrants compared to non-immigrants for Peel and Ontario with the corresponding rate ratio. These risk factors for heart disease are generally less common in recent immigrants compared to non-immigrants with the exception of physical inactivity.

Definition

A *rate ratio* is the result of the comparison of one rate to another rate. For example, if the prevalence of physical inactivity was 61% among recent immigrants in Peel and 45% among non-immigrants, the rate ratio would be calculated as 61.4/44.9 = 1.37. Which means the prevalence of physical inactivity is 37% higher in recent immigrants than in non-immigrants. A rate ratio of 1 indicates no difference between the two rates.

Some cardiovascular disease risk factors are more common than others among various ethnic groups (Table 6.2).

Table 6.1
Comparison of Selected Risk Factors for Heart Disease† by Immigrant Status and Rate Ratio, Peel and Ontario, 2009/2010

	Peel			Ontario		
Risk Factor	Recent Immigrants (%)	Non-immigrants (%)	Rate Ratio€	Recent Immigrants (%)	Non-immigrants (%)	Rate Ratio€
Ever a smoker (current or former)	16.9 (12.3-22.6)	37.4 (33.4-41.6)	0.45	18.6 (16.0-21.4)	44.6 (43.6-45.5)	0.42
Physical inactivity	61.4 (53.8-68.4)	44.9 (40.7-49.2)	1.37	61.1 (57.6-64.5)	43.8 (42.9-44.8)	1.39
Overweight or Obese±	40.0 (32.4-48.1)	46.0 (41.3-50.8)	0.87	36.4 (32.6-40.4)	52.4 (51.4-53.5)	0.69
Diabetes†	NR	4.4* (3.1-6.2)	–	4.8* (3.0-7.7)	5.6 (5.3-6.0)	0.86
High blood pressure†	11.4* (7.6-16.9)	13.4 (10.6-16.8)	0.85	8.9 (6.7-11.7)	15.9 (15.2-16.5)	0.56

† Diagnosed by a physician.
€ Recent immigrant / Non-immigrant.
* Use estimate with caution.
± Based on those aged 18 years and older.
NR = Not releasable due to small number.
Source: Canadian Community Health Survey 2009/2010, Share File, Ontario Ministry of Health and Long-Term Care.

Table 6.2
Top Three Cardiovascular Disease Risk Factors by Ethnic Group

	Ethnic Group		
	South Asian	Chinese	European
Risk Factors	Diabetes	Smoking	Smoking
	Smoking	Elevated blood pressure	Elevated blood pressure
	Elevated blood pressure	Diabetes	Elevated cholesterol

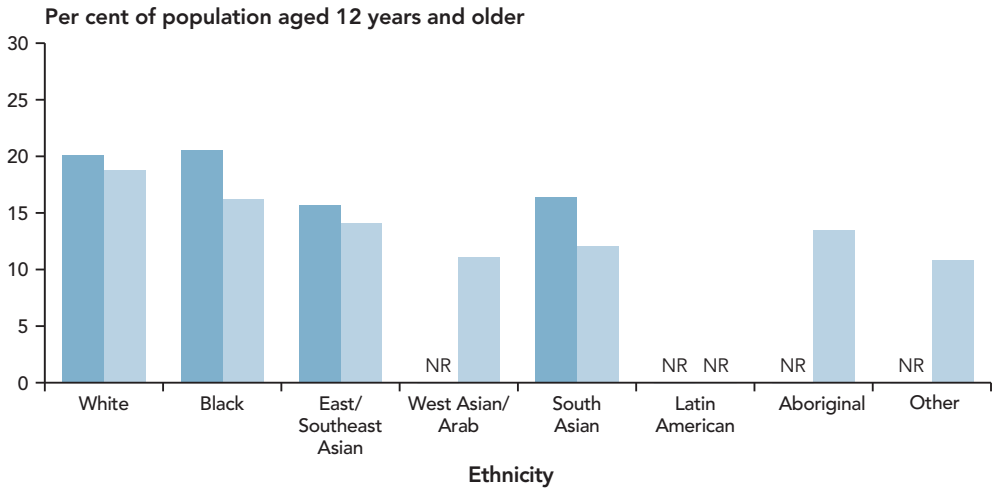
Source: Anand S. Ethnicity and the Determinants of Cardiovascular Disease among South Asians, Chinese and European Canadians. 2002. Open Access Dissertations and Theses. Paper 4053. Available from: http://digitalcommons.mcmaster.ca/opendissertations/4053.

Immigrant status, Ethnicity and Heart Disease

Some ethnic groups have a higher risk of developing cardiovascular disease. For example, South Asians have a higher risk compared to those of Chinese ethnicity.[9, 156] Reasons for these increased risks are discussed later in this chapter.

High blood pressure is more common among long-term immigrants.[157] In Canada, high blood pressure is also more common among populations of Ukrainian, Chinese, Portuguese, South Asian, Black, Filipino and Southeast Asian ethnicity.[158, 159] Figure 6.5 shows the prevalence of high blood pressure by ethnicity in Peel and Ontario.

Figure 6.5
Prevalence of High Blood Pressure† by Ethnicity, Peel and Ontario, 2009/2010



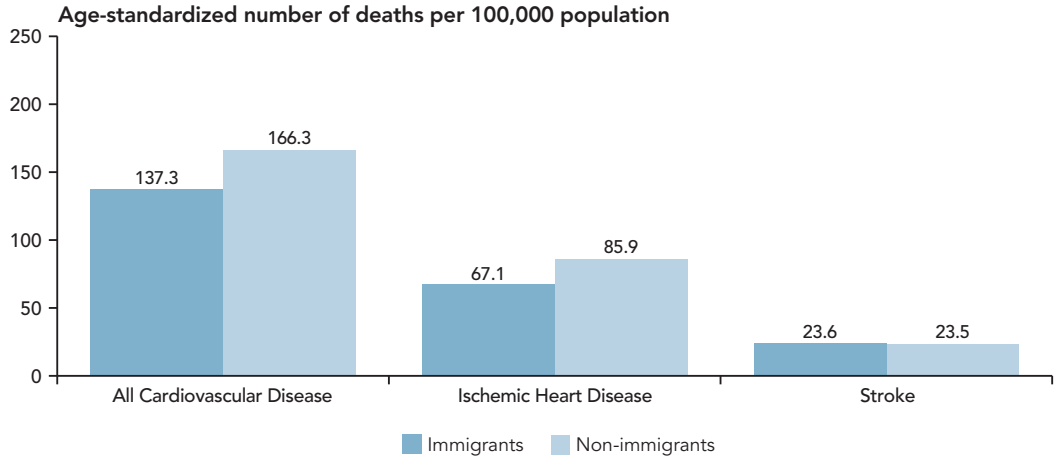
	White	Black	East/ Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Peel % (95% CI)	20.1 (17.0 – 23.7)	20.5* (13.2 – 30.3)	15.7* (10.7 – 22.3)	NR	16.4* (11.5 – 22.7)	NR	NR	NR
Ontario % (95% CI)	18.8 (18.1 – 19.5)	16.2 (11.8 – 21.7)	14.1 (11.8 – 16.8)	11.1* (6.6 – 18.1)	12.1 (9.7 – 15.1)	NR	13.5 (11.1 – 16.3)	10.8* (7.2 – 15.9)

† Diagnosed by a physician.
* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

In Peel, between 2005 and 2007, mortality from cardiovascular disease, including ischemic heart disease was lower in the immigrant population compared to the non-immigrant population (Figure 6.6 and Figure 6.7). Across most age groups there was no difference in mortality from stroke by immigrant status, with the exception of 85 years and older where rates were higher in immigrants compared to non-immigrants (Figure 6.8).

In Peel, ischemic heart disease is the leading cause of death for both immigrants and non-immigrants.

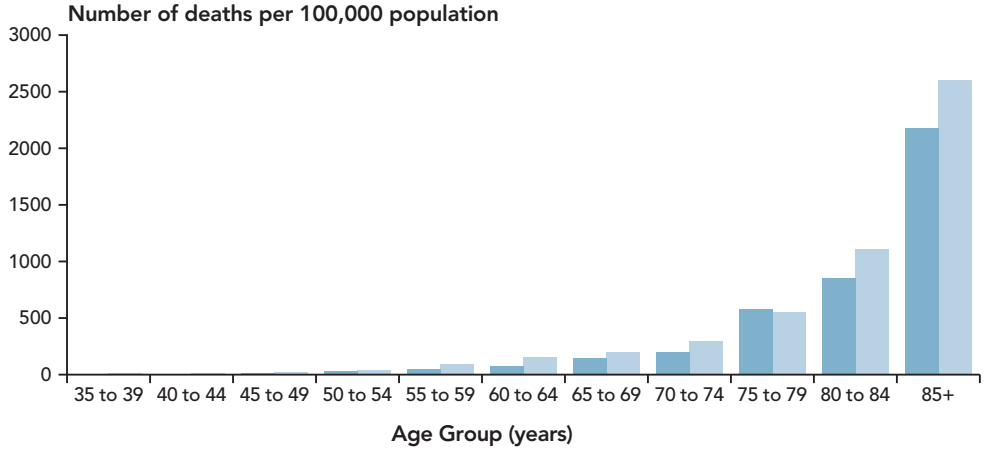
Figure 6.6
Mortality From Cardiovascular Disease by Immigrant Status, Peel, 2005-2007 Combined



Sources: Ontario Mortality Database 2005-2007, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care; Statistics Canada, 2006 Census.

Figure 6.7

Mortality From Ischemic Heart Disease by Immigrant Status and Age Group, Peel, 2005–2007 Combined

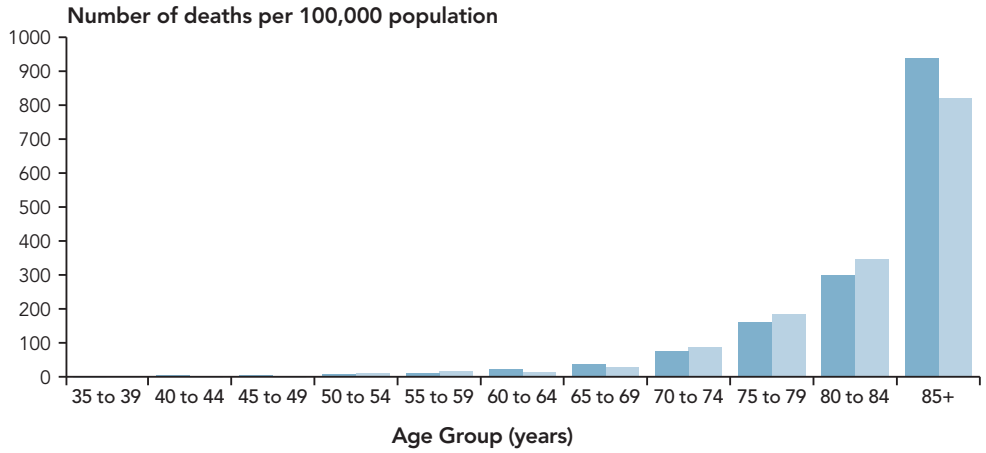


	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85+
Immigrants	2.8	7.1	16.1	27.6	52.5	76.5	145.2	202.2	582.3	851.8	2,181.0
Non-immigrants	NR	14.2	24.9	38.9	90.9	153.5	201.6	299.1	554.1	1,111.1	2,606.4

NR = Not releasable due to small numbers.
Note: There were either no deaths in the ages up to 34 years of age or the number of deaths were not releasable.
Sources: Ontario Mortality Database 2005-2007, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care; 2006 Census, Statistics Canada.

Figure 6.8

Mortality From Stroke by Immigrant Status and Age Group, Peel, 2005–2007 Combined



	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85+
Immigrants	NR	5.1	5.7	6.6	11.1	20.9	35.6	75.4	160.5	299.9	937.8
Non-immigrants	NR	NR	NR	11.3	16.9	12.2	29.3	87.4	182.7	345.1	820.4

NR = Not releasable due to small numbers.
Note: There were either no deaths in the ages up to 35 years of age or the number of deaths were not releasable.
Sources: Ontario Mortality Database 2005-2007, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care; 2006 Census, Statistics Canada.

Did You Know

Research in International Cardiovascular Health – Lifestyle, Environment and Genetic Attributes in Children and Youth (RICH LEGACY)

The RICH LEGACY study is being led by Dr. Zubin Punthakee from McMaster University. The study will characterize anthropometry and other cardiovascular disease risk factors in Caucasian and Indian children in urban Canada, and Indian children in rural and urban India to determine their relationships to genetics, lifestyle behaviours and attitudes, and family and school environments.

Definition

Health-adjusted life expectancy (HALE) is an indicator that takes into account the quality of life, as well as its duration. It is a positive measure of health expectancy which represents life expectancy adjusted according to the amount of time spent in poor health. Years lived in poor health are counted as equivalent to only part of a full year of good health. HALE, therefore, is always less than life expectancy.

Diabetes

Diabetes develops when the pancreas can no longer produce or make enough insulin for the body. It is a chronic condition that can lead to long-term complications, such as cardiovascular disease, chronic kidney disease, blindness, impotence, and lower limb amputations. Diabetes increases the likelihood of early mortality. In Ontario, health-adjusted life expectancy at birth for men and women with diabetes mellitus is 11.9 and 10.7 years less respectively than that of men and women without diabetes mellitus.[160]

There is no cure for diabetes; however, the onset of Type 2 diabetes can be prevented or delayed by following healthy dietary and physical activity recommendations. In addition, the likelihood of developing complications can be reduced through effective self-management strategies.

Definition

Type 1 Diabetes: the pancreas does not produce enough insulin and individuals rely on an external source of insulin. This usually develops in childhood or adolescence, there is no known way to prevent it.

Type 2 Diabetes: the pancreas does not make enough insulin or does not use insulin efficiently to control blood glucose levels. This is often diagnosed in adulthood, but is now increasingly prevalent among younger age groups.

Gestational Diabetes: is a form of diabetes that develops during pregnancy. Although it typically disappears after delivery, these women remain at a higher risk of developing Type 2 diabetes.

Pre-Diabetes: when blood glucose levels are high, but not elevated enough to be diagnosed as diabetes.

Risk Factors

Risk factors for developing Type 2 diabetes include:

- being older;[161, 162]
- being of a certain ethnicity (e.g., persons of South Asian, Asian, Aboriginal, Hispanic or African descent);[161]
- having a family history of diabetes;[162]
- having a history of impaired glucose tolerance;[161, 162]
- having a history of diabetes while pregnant (gestational diabetes);[161, 162]
- having given birth to a macrosomic infant (i.e., a baby with an excessive birth weight defined as weighing over 4,500 grams);[161]
- having metabolic syndrome (a combination of conditions that is associated with diabetes and cardiovascular disease);[162]
- being physically inactive;[162]
- having high blood pressure;[161]
- being obese or having an increased body mass index;[161, 162] and/or
- having abdominal obesity.[161]

Prevalence of Diabetes

Diabetes may often go undiagnosed making it difficult to determine the true prevalence of the condition. The estimated prevalence of diabetes in Canada is high.[163]

- In 2010, 2.7 million Canadians had diabetes (or 8% of Canadians).
- By 2020, 4.2 million Canadians are expected to have diabetes (or 11% of Canadians).

In Ontario, recent immigrants and refugees from South Asia, Latin America, the Caribbean and Sub-Saharan Africa have a risk two to three times greater of developing Type 2 diabetes than immigrants and refugees from western Europe and North America.

In Canada and Ontario, the rate of diabetes is higher among men compared to women,[164] and among newcomer and specific ethnic groups compared to long-term residents.[161, 165] When compared with immigrants from western Europe and North America, South Asian immigrants are three to four times more likely to develop Type 2 diabetes; and Latin American/Caribbean/African immigrants are twice as likely to develop Type 2 diabetes.[165-167]

The prevalence of diabetes in Peel and Ontario has risen rapidly for the past decade; and in Peel, the prevalence rate exceeds that of Ontario.[108] This increase is projected to continue due to an aging population, rising prevalence of obesity and increase in the high-risk immigrant population.[161, 168]

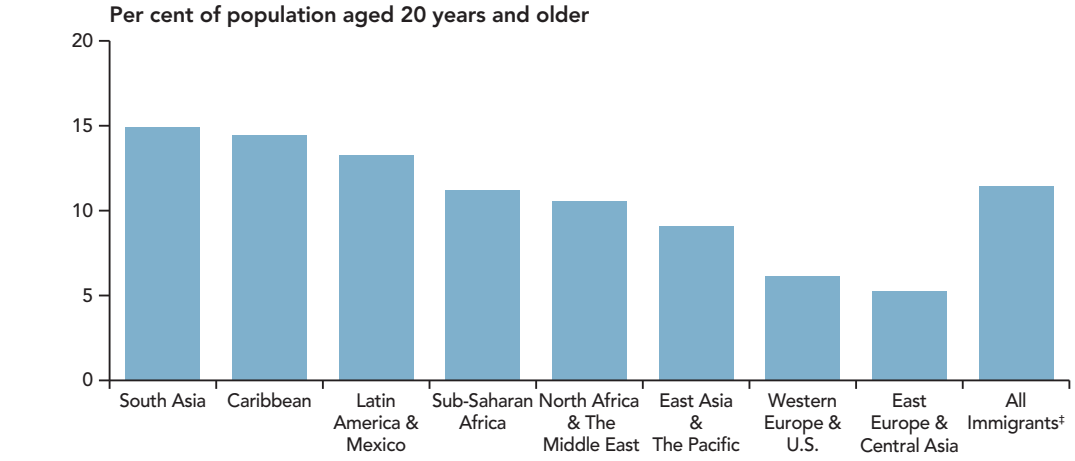
Did You Know

Diabetes Atlas

In collaboration with the Institute for Clinical and Evaluative Sciences (ICES) and the Centre for Research on Inner City Health (CRICH), Peel Public Health is currently developing a Diabetes Atlas to identify the geographic patterns of diabetes in relation to other chronic conditions and risk factors that are of major importance to the population of Peel. The atlas will illustrate and measure patterns of relationships between neighbourhood characteristics and the local prevalence of diabetes in Peel. The atlas will serve as a body of evidence to support decision makers in program and policy development.

An estimated 10% of Peel's population aged 20 years and older has diabetes.[169] Immigrants are more likely than those born in Canada to report having been diagnosed with diabetes (data not shown).[D1] Eleven per cent of all immigrants living in Peel have diabetes. Those from South Asia, the Caribbean, Latin America and Mexico, are more likely to have diabetes compared to immigrants from other regions of the world. Figure 6.9 shows diabetes prevalence in Peel's immigrant population aged 20 years and older by world region of birth.

Figure 6.9
Diabetes Prevalence† by World Region of Birth, Peel, 2008



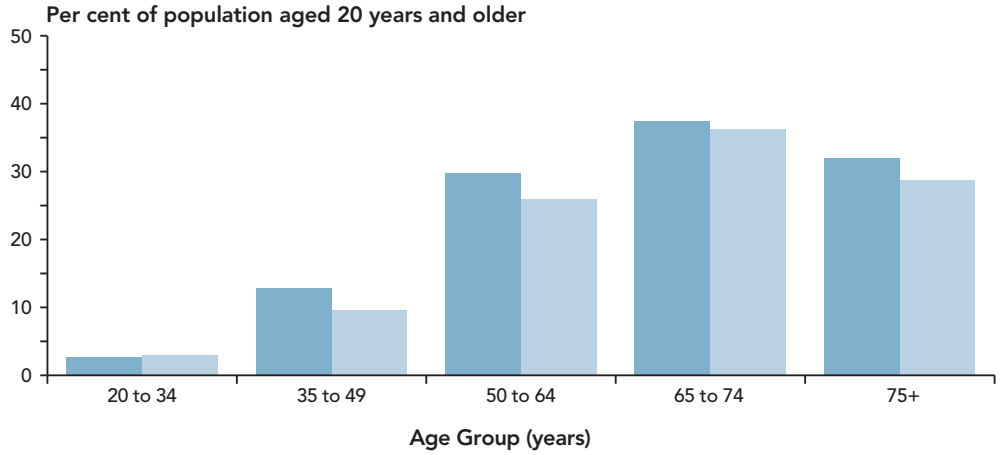
	South Asia	Caribbean	Latin America & Mexico	Sub-Saharan Africa	North Africa & The Middle East	East Asia & The Pacific	Western Europe & U.S.	East Europe & Central Asia	All Immigrants‡
Per cent (95% CI)	14.9 (14.6–15.2)	14.5 (13.9–15.1)	13.3 (12.7–13.9)	11.2 (10.3–12.1)	10.5 (9.9–11.2)	9.1 (8.8–9.4)	6.1 (5.6–6.7)	5.3 (4.9–5.6)	11.4 (11.3–11.6)

* Standardized to the 1991 Canada population based on 1991 Census data from Statistics Canada.
† Prevalence on March 31, 2008 for immigrants (immigrating between 1985-2005).
‡ All immigrants is not equivalent to the sum from all regions, since people from unknown or stateless origin are included in the total.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Reference: Creatore, M.I. (2011). Unpublished data from PhD dissertation in preparation. Data sources: Landed Immigrant Database (Citizenship and Immigration Canada, 1985-2000); Ontario Diabetes Database (Institute for Clinical Evaluative Sciences, 2010).

In Peel, diabetes is more prevalent among South Asian males aged 35 to 64 years compared to their female counterparts (Figure 6.10). Among Caribbean immigrants, females aged 75 years and older are more likely to have diabetes than their male counterparts (Figure 6.11).

Figure 6.10

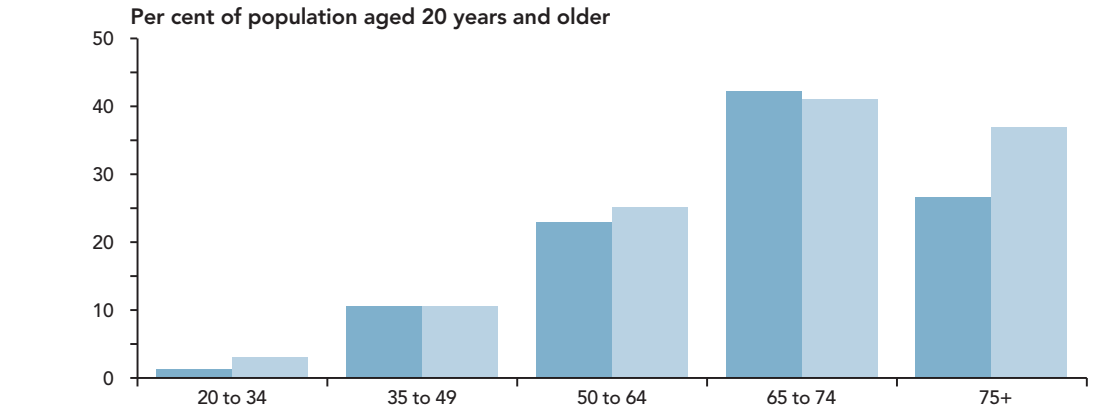
Diabetes Prevalence† among Immigrants Born in South Asia by Age Group and Sex, Peel, 2008



	20 to 34	35 to 49	50 to 64	65 to 74	75+
Males % (95% CI)	2.6 (2.3 – 2.9)	12.8 (12.3 – 13.3)	29.8 (28.8 – 30.8)	37.4 (35.6 – 39.2)	32.0 (29.9 – 34.1)
Females % (95% CI)	3.0 (2.7 – 3.3)	9.6 (9.2 – 10.1)	25.9 (24.8 – 26.9)	36.2 (34.5 – 37.8)	28.7 (26.7 – 30.7)

† Prevalence on March 31, 2008 for immigrants aged 20+ year (immigrating to Peel region between 1985-2000).
‡ All immigrants is not equivalent to the sum from all regions, since people from unknown or stateless origin are included in the total.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Reference: Creatore, M.I. (2011). Unpublished data from PhD dissertation in preparation. Data sources: Landed Immigrant Database (Citizenship and Immigration Canada, 1985-2000); Ontario Diabetes Database (Institute for Clinical Evaluative Sciences, 2010).

Figure 6.11
Diabetes Prevalence† among Immigrants Born in the Caribbean by Age Group and Sex, Peel, 2008



	20 to 34	35 to 49	50 to 64	65 to 74	75+
Males % (95% CI)	1.3 (0.9 – 1.7)	10.6 (9.8 – 11.5)	22.9 (20.9 – 24.8)	42.2 (36.7 – 47.6)	26.6 (21.7 – 31.6)
Females % (95% CI)	3.0 (2.5 – 3.6)	10.6 (9.8 – 11.4)	25.17 (23.2 – 27.1)	41.0 (37.0 – 45.0)	36.9 (33.2 – 40.5)

† Prevalence on March 31, 2008 for immigrants aged 20+ year (immigrating to Peel region between 1985-2000).
‡ All immigrants is not equivalent to the sum from all regions, since people from unknown or stateless origin are included in the total.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Reference: Creatore, M.I. (2011). Unpublished data from PhD dissertation in preparation. Data sources: Landed Immigrant Database (Citizenship and Immigration Canada, 1985-2000); Ontario Diabetes Database (Institute for Clinical Evaluative Sciences, 2010).

Diabetes prevalence rates in Peel's immigrant population vary by country of birth.

Table 6.3 shows diabetes prevalence rates among immigrants living in Peel for the top 25 countries of birth. We know that diabetes prevalence rates vary by country of birth; however, we do not necessarily know the ethnicity of those individuals. For example, we may be seeing a higher prevalence of diabetes among Peel's Guyanese population, but many people from Guyana may be of South Asian ancestry.

Table 6.3
Diabetes Prevalence* among Immigrants by Top 25 Countries of Birth†, Peel, 2008

Country of Birth	Age-sex-standardized prevalence (%)	Lower 95% CI	Upper 95% CI
Myanmar (Burma)	21.8	13.9	32.0
Sri Lanka	21.1	20.1	22.2
Fiji	19.3	15.3	24.0
Guyana	17.9	17.0	18.9
Bangladesh	17.2	14.2	20.4
Somalia, Democratic Republic of	16.5	10.8	23.3
Trinidad and Tobago, Republic of	15.5	14.5	16.5
Afghanistan	15.2	12.8	17.8
Pakistan	15.0	14.2	15.9
Jamaica	14.6	13.7	15.5
St. Vincent and the Grenadines	14.3	9.4	20.5
Israel	14.2	10.8	18.3
India	13.9	13.6	14.3
Ethiopia	13.6	9.0	19.1
Mauritius	12.9	10.0	16.4
Philippines	12.0	11.5	12.6
Azores, Portugal	12.0	9.7	14.7
Kenya	11.8	9.7	14.2
Sudan, Democratic Republic of	11.7	7.9	16.6
Barbados	11.7	8.4	15.8
Egypt	11.6	10.2	13.1
Uganda	11.6	6.8	17.8
Iraq	11.2	9.6	13.0
Tanzania, United Republic of	11.0	8.5	14.0
Malaysia	10.9	8.8	13.4

Notes: Study cohort comprised of all immigrants to Ontario between 1985 and 2000 who were aged 20 years or older on March 31, 2008.
95% CI reflects the 95% confidence interval of the estimate.
* Standardized to the 1991 Canadian population based on 1991 Census data from Statistics Canada.
† Only countries with a rate based on a population ≥ 100, and diabetes mellitus cases ≥ 20 were included.
Reference: Creatore, M.I. (2011). Unpublished data from PhD dissertation in preparation.
Data sources: Landed Immigrant Database (Citizenship and Immigration Canada, 1985-2000); Ontario Diabetes Database (Institute for Clinical Evaluative Sciences, 2010).

Did You Know

Diabetes Prevention Pilot Project: A community approach for preventing diabetes within the South Asian population

Peel Public Health received funding from the Province of Ontario to implement and evaluate a Diabetes Prevention Pilot Project within the South Asian community in Peel. Recognizing the need for primary prevention efforts to address rising rates of diabetes in Peel, Peel Public Health implemented a pilot program, and a social marketing campaign to raise awareness of diabetes, the associated diabetes risk factors, and to promote behaviour change.

Peel Public Health partnered with four South Asian community agencies in Brampton and Mississauga to pilot the six-week Diabetes Prevention Program (DPP). Peel Public Health staff promoted diabetes prevention through a series of skill-building and educational sessions specifically focused on physical activity and healthy eating. Participants were also screened for the risk factors associated with Type 2 diabetes using the Canadian Diabetes Risk Assessment Questionnaire (CANRISK) and physical measures, such as blood pressure, blood cholesterol, waist circumference and body mass index were obtained.

A qualitative assessment of the pilot found increased knowledge and awareness about diabetes risk factors, and behaviour change related to healthy eating and physical activity, which were maintained at the three-month follow up. The community agencies indicated that they had created organizational changes following implementation of the DPP to promote healthy eating and active living.

Social Marketing Campaign

As part of the DPP, a social marketing campaign was implemented to raise awareness in Peel's South Asian Community about diabetes. The campaign consisted of posting various ads in newspapers, shopping malls, cinemas and on Facebook, and distributing posters and brochures. As a result, there have been an increased number of visits to Peel Public Health's diabetes websites: southasiandiabetes.ca and preventdiabetes.ca.

While a qualitative assessment of this campaign indicated that it was able to convey messages successfully on diabetes prevention and influence perception of diabetes, the assessment also reported low personal relevance, that participants are not easily motivated to make lifestyle changes, and suggested the need for ongoing tailored prevention messaging targeted at Peel's South Asian population.

It has been suggested that the increasing prevalence rates of diabetes among immigrants as their length of stay increases in Canada[170] are the result of multiple and inter-related determinants of health. These factors may include: low income, dietary changes, weight gain, social isolation and stress, as well as a lack of opportunity to be physically active.

In Peel, diabetes prevalence rates are higher in immigrants, however, mortality rates are lower than for the Canadian-born population.

Diabetes Mortality

Table 6.4 shows the age-standardized mortality rates for diabetes in Canada and countries from where Peel residents have emigrated. In addition, the table also shows the countries with the highest and lowest rates of death from diabetes.

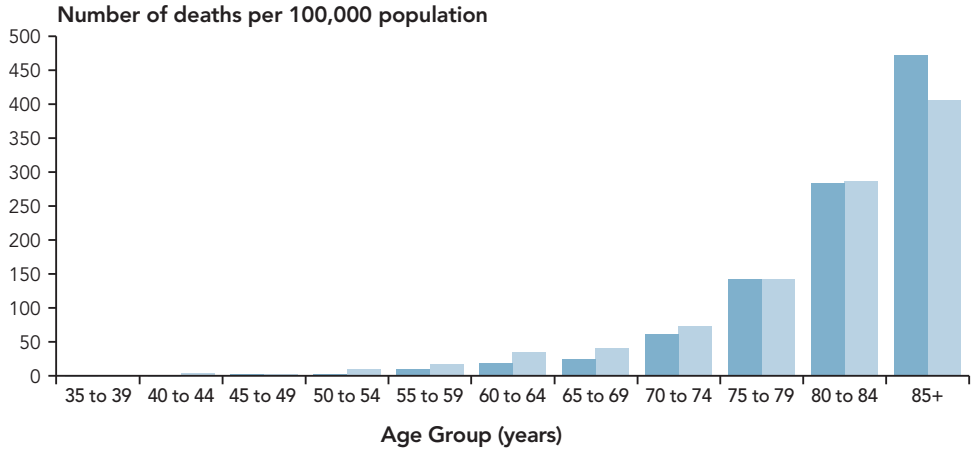
In Peel, between 2005 and 2007, mortality from diabetes was lower in immigrants under the age of 75 years and higher among those aged 85 years and older compared to non-immigrants (Figure 6.12).

Table 6.4
Mortality Rates from Diabetes, Selected Countries and Canada, 2004

Country	Age-standardized number of deaths per 100,000 population
Trinidad and Tobago	128.2
Jamaica	36.8
Portugal	23.0
India	22.4
United States	16.8
Canada	**14.8**
Italy	12.3
China	11.6
Poland	9.6
Ireland	8.3
United Kingdom	5.8
Mongolia	2.0

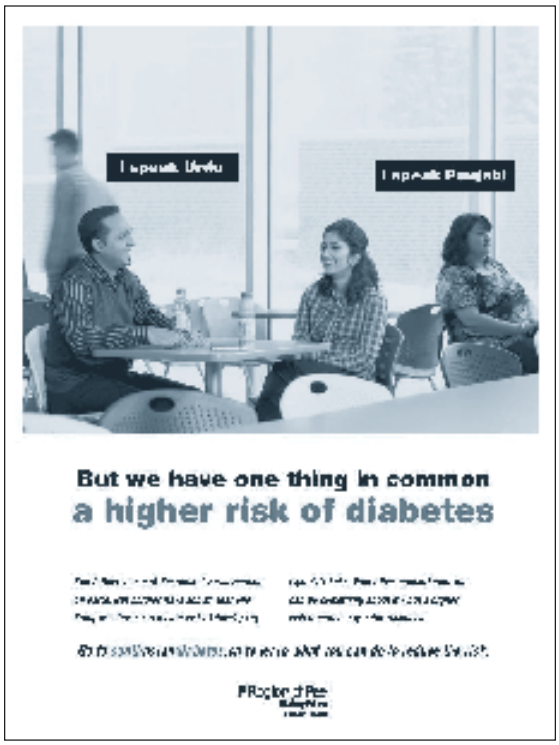
Source: World Health Organization Info Database: https://apps.who.int/infobase/Index.aspx, May 25, 2011.

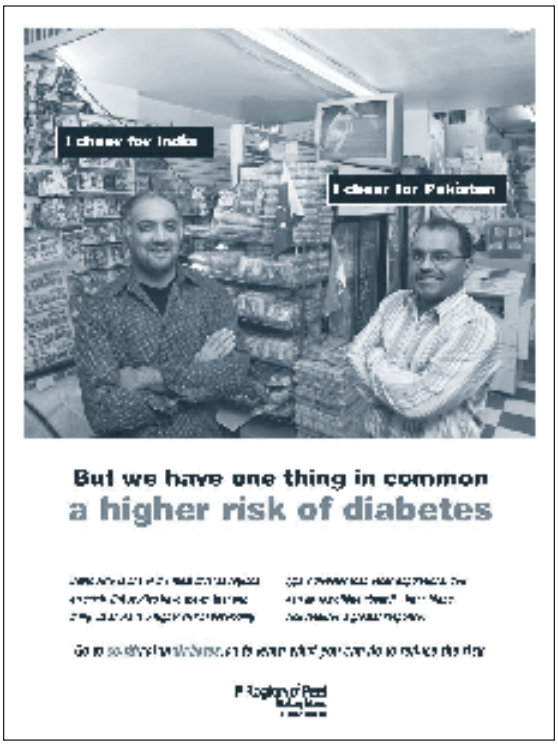
Figure 6.12
Mortality From Diabetes by Immigrant Status and Age Group, Peel, 2005–2007 Combined



	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85+
Immigrants	NR	NR	2.9	2.0	9.6	17.9	23.8	61.7	142.3	283.9	472.6
Non-immigrants	NR	4.4	1.9	10.0	16.9	34.1	40.3	73.6	141.5	286.2	405.0

NR = Not releasable due to small numbers.
Note: There were either no deaths in the ages up to 35 years of age or the number of deaths were not releasable.
Sources: Ontario Mortality Database 2005-2007, IntelliHEALTH, Ontario Ministry of Health and Long-Term Care; 2006 Census, Statistics Canada.





Diabetes Prevention and Care

Diabetes management can help optimize metabolic control and quality of life to prevent acute and chronic complications.[171]

Diet and lifestyle interventions (e.g., exercise) aimed at reducing weight can also reduce the incidence of diabetes; however, these strategies are more effective in younger populations.[172] Factors that may complicate diabetes care and education among immigrants and ethnocultural groups are:[46, 166]

- low socioeconomic status;
- language barriers;
- migration stress; and
- cultural influences (e.g., in diets, lifestyle, perception of weight and religious fasts).

While culturally appropriate health education may help improve diabetes care,[173] information that is appropriate for a variety of ethnic groups may not always be readily available.

The Canadian Diabetes Association recommends early screening for all adults over the age of 40 years, particularly for those with additional risk factors.[161] Clinical guidelines suggest screening immigrants and refugees over the age of 35 years from ethnic groups at high risk for Type 2 diabetes (South Asian, Latin American and African) with fasting blood glucose.[46] Those with high blood pressure and high cholesterol are also at high risk for complications, and will benefit from interventions focused on reducing obesity, high cholesterol, high blood pressure and hyperglycemia.[46]

Overweight and Obesity

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.[174] An individual's body mass index (BMI) is one method used to classify overweight and obesity. Adults with a BMI of 25 to 29.9 are considered overweight, and those with a BMI of 30 or more are considered obese.[174] BMI is the most commonly used non-invasive measure of obesity. Another measure of obesity is the waist-to-hip ratio, which specifically measures abdominal obesity.

Measurement

Body Mass Index (BMI) is calculated by dividing a person's weight (kg) by the square of their height (kg/m²). An adult's BMI falls into the following categories:[175]

BMI Category (kg/m²)	*Classification*	*Risk of Developing Health Problems*
<18.5	Underweight	Increased
18.5 to 24.9	Healthy Weight	Least
25.0 to 29.9	Overweight	Increased
30.0 to 34.9	Obese Class I	High
35.0 to 39.9	Obese Class II	Very High
≥ 40.0	Obese Class III	Extremely high

BMI in school-aged children is measured based on the World Health Organization's Classification System:

BMI Category	*Percentile*
Underweight	< 3rd percentile
Healthy Weight	≥3rd percentile to < 85th percentile
Overweight	≥85th percentile to < 97th percentile
Obese	≥97th percentile

Specific BMI cut-off points may not apply to all populations and do not take into account frame size, bone density, body fat percentage and muscularity.

Waist-to-hip Ratio is calculated by the waist circumference divided by the hip circumference. A higher ratio has been found to be associated with increased risk of myocardial infarction, stroke and premature death.[176]

Definition

The ***built environment*** is a term referring to the physical form and character of communities. It usually consists of three elements: transportation systems, land use patterns, and urban design characteristics.

Overweight and obesity are influenced by nutrition, physical activity and genetic predisposition, as well as other lifestyle factors, including behavioural factors (e.g., tobacco and alcohol use) and environmental factors (e.g., the built environment). Abdominal obesity, which has been found to increase the risk of diabetes, cardiovascular disease and all-cause mortality is of concern.[167, 177-179] Those who are overweight or obese face multiple health risks. Overweight and obesity is positively associated with various medical problems including:

- diabetes;
- cardiovascular disease (mainly heart disease and stroke);
- high blood pressure;
- cancer, such as endometrial, breast and colon cancer; and
- musculoskeletal disorders, such as osteoarthritis.

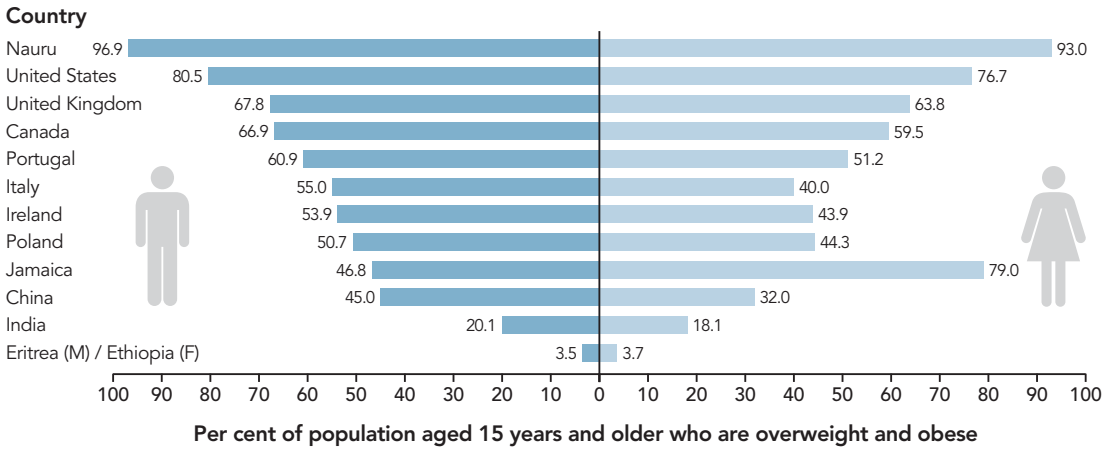
Weight Gain and Ethnicity

Factors that affect weight gain among immigrants and ethnocultural groups are:

- nutritional transition (the change or shift of dietary practices to the dominant culture's food patterns);[167, 180, 181]
- physical inactivity;
- gene-environment interaction (the relationship between genetic susceptibility and environmental factors, such as diet, smoking and exercise);[167, 182] and
- emotional stress associated with being in a new environment, dealing with social, economic and language disparities, as well as finding a job.

Figure 6.13 shows the prevalence of overweight and obesity (BMI ≥ 25) in Canada compared to countries from where Peel residents have emigrated. In addition, the figure shows the countries with the highest and lowest prevalence of overweight and obesity.

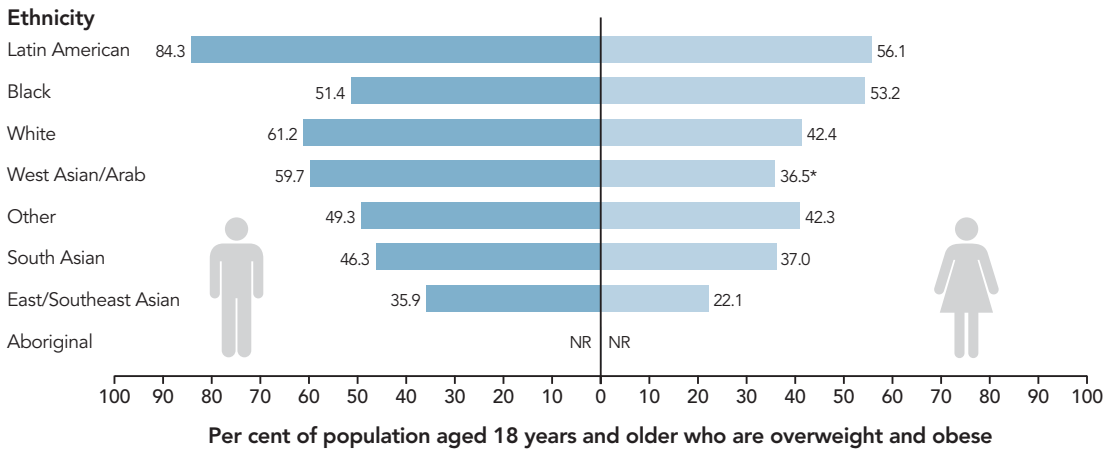
Figure 6.13
Estimated Prevalence of Overweight and Obesity† by Sex, Selected Countries and Canada, 2010



† Based on BMI ≥ 25 Kg/m2.
Source: World Health Organization Info Database: https://apps.who.int/infobase/Index.aspx, April 12, 2011.

In Canada, overweight and obesity rates (based on BMI) are highest among those who self-identify as White, Latin American, Off-Reserve Aboriginal, Black and West Asian/Arab populations.[183] Similar differences in overweight and obesity are observed in Peel (Figure 6.14). Latin American males in Peel have the highest rate of overweight and obesity compared to males of other ethnic groups.

Figure 6.14
Overweight and Obesity† by Ethnicity Origin and Sex, Peel, 2001, 2003, 2005, 2007/2008 and 2009/2010 Combined



* Use estimate with caution.
NR = Not releasable due to small numbers.
† Based on BMI ≥ 25 Kg/m^2.
Note: Excludes pregnant and lactating women.
Source: Canadian Community Health Survey 2001, 2003, 2005, 2007/2008, 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Individuals of different ethnicities may have different body fat distribution.

Individuals of different ethnicities may have different body fat distribution.[177, 184] For example, South Asians, compared to European populations, have increased abdominal fat and greater insulin resistance at similar levels of BMI (< 25kg/m^2). Having a thin body frame combined with a higher percentage of internal body fat (known as the "thin-fat phenotype")[185] explains why overall, South Asians in Peel have a lower rate of overweight and obesity (as shown in Figure 6.14), while also experiencing higher rates of cardiovascular disease and diabetes. Table 6.5 outlines country and ethnic-specific cut-off points for waist circumference that have been developed to screen adult males and females for the prevention of chronic disease. Individuals above the cut-off points may be at higher risk for developing chronic diseases.

Table 6.5
Ethnic-Specific Cut-Off Points for Waist Circumference

Country or Ethnicity	Waist Circumference in Centimetres
European	
Male Female	≥94 ≥80
South Asian	
Male Female	≥90 ≥80
Chinese	
Male Female	≥90 ≥80
Japanese*	
Male Female	≥85 ≥90
South and Central American	Use South Asian recommendations until more specific data are available
Sub-Saharan African	Use European data until more specific data are available
Eastern Mediterranean and Middle East	Use European data until more specific data are available

* Further analyses suggests that Asian values should be used for this population until additional data are available.
Source: Alberti KG, Zimmet P, Shaw J. Metabolic Syndrome – a new world-wide definition: A consensus statement from the International Diabetes Federation. Diabet Med 2006; 23:469-480.

There is a need for ethnic-specific BMI cut-off points.

Given these differences, there is a need to create ethnic-specific BMI cut-off points. In 2004, the World Health Organization suggested that BMI cut-offs for Asians (those from China, Indonesia, Japan, Thailand and Singapore) be changed to the following:[186]

- increasing but acceptable risk 18.5 to <23 kg/m^2;
- increased risk 23 to <27.5 kg/m^2; and
- high-risk ≥27.5 kg/m^2.

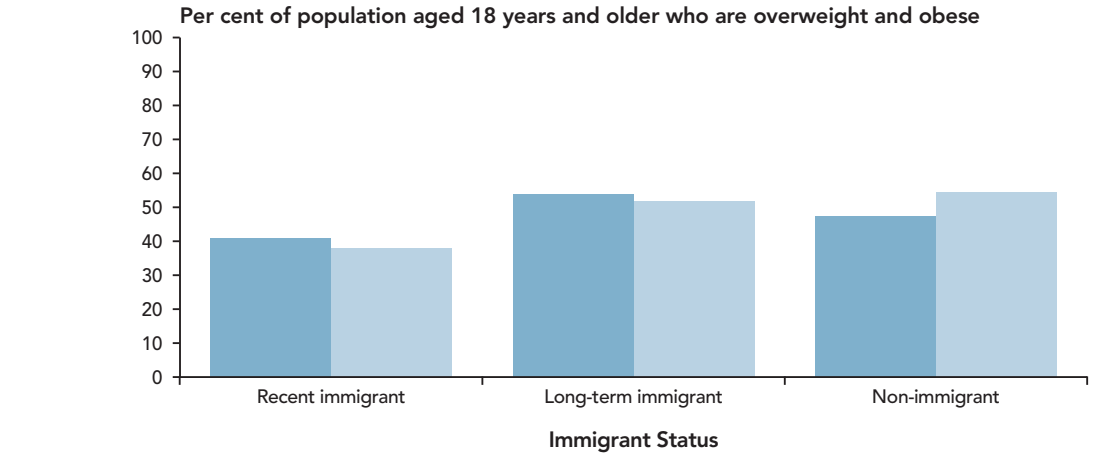
The need for revised BMI cut-off values for other at risk groups (e.g., among South Asians, Chinese and Blacks, whose diabetes and cardiovascular risk increases at a BMI of 24 kg/m^2, 25 kg/m^2, and 26 kg/m^2 respectively, compared to Caucasians, where risk begins to increase at a BMI of 25 kg/m^2) has also been suggested.[187]

Among immigrant populations, overweight and obesity tend to increase with length of time in Canada.

The prevalence of overweight and obesity increases with the length of time in Canada. Long-term immigrants are more likely to be overweight or obese compared to recently landed immigrants.[183, 188] Although some ethnic groups may have a lower prevalence of overweight and obesity upon arrival, this has been shown to increase with length of stay.

Figure 6.15 shows the prevalence of overweight and obesity by immigrant status for Peel and Ontario. Consistent with what is observed in Canada, Peel's long-term immigrants are more likely to be overweight or obese compared to recent immigrants.[D1]

Figure 6.15
Overweight and Obesity by Immigrant Status, Peel and Ontario, 2009/2010



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel per cent (95% CI)	40.9 (33.2 – 49.1)	53.9 (48.2 – 59.5)	47.4 (42.5 – 52.3)
Ontario per cent (95% CI)	38.0 (34.0 – 42.0)	51.7 (49.3 – 54.0)	54.5 (53.4 – 55.5)

Notes: Excludes pregnant and lactating women.
95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

More information on these lifestyle factors can be found in Chapter 7. It should be noted that post-migration changes in body weight are not experienced equally by all newcomers.[188, 189]

Did You Know

Study of Health Assessment and Risk in Ethnic Groups (SHARE)

The SHARE research project looked at differences in risk factors for cardiovascular disease or atherosclerosis between ethnic groups (South Asians, Chinese, and European). Nine hundred and eighty-five (985) people from Hamilton, Toronto and Edmonton participated in the study. Carotid atherosclerosis was measured, along with conventional (smoking, hypertension, diabetes, raised cholesterol) and novel risk factors (markers of a prothrombotic state).

The SHARE project found that rates of diabetes and obesity were higher among South Asians compared to Canadians of Chinese and European origin.[12] There is also intra-ethnic variation in excess weight.

Ethnic social networks significantly influence the incidence of excess weight with years in Canada.[188] For example, if an individual resides in a neighbourhood with a relatively large ethnic community similar to their own, and the ethnic group was less likely to be overweight or obese than the average Canadian, then the individual is also less likely to be overweight or obese.

In Peel in 2011, the prevalence of overweight and obesity among students in Grades 7 to 12 did not differ by immigrant status (data not shown).

Metabolic Syndrome

Metabolic syndrome is a combination of complex factors that increase the risk of cardiovascular disease and Type 2 diabetes.[178, 190] There are many accepted definitions of metabolic syndrome; however, the main components are: glucose intolerance, abdominal adiposity, elevated triglycerides, high blood pressure and low high density lipoprotein (HDL) cholesterol levels.[190]

One in five Canadians have metabolic syndrome.

Metabolic syndrome affects 19% of Canadians. The prevalence increases with age and is highest among adults between the ages of 70 to 79 years.[191] In Ontario, the rate of metabolic syndrome varies by ethnicity, and is more common among Aboriginals, South Asians, Europeans and Chinese populations.[192]

Did You Know

Metabolic Syndrome, Diabetes and Cardiovascular Disease in South Asians

Metabolic syndrome, diabetes and cardiovascular disease are interconnected conditions that are more common among the South Asian population compared to other ethnic groups.

- South Asians have two to three times the rates of diabetes compared with the overall population.[165, 193]
- It is estimated that between 20 to 25% of South Asians develop metabolic syndrome.[194]
- Both metabolic syndrome and diabetes result in an increased risk of cardiovascular disease.[9, 156, 177, 195]
- Death from ischemic heart disease is higher among Canadian South Asians compared to those of Chinese and European backgrounds.[196]

Common risk factors among the South Asian population include:

- increased insulin resistance and pre-diabetes symptoms;
- increased incidence of truncal and abdominal obesity;
- excess body fat/ higher percentage of body fat; and/or
- physical inactivity.[12, 166, 178, 179, 197-199]

You can potentially reduce your risk to this cluster of conditions (metabolic syndrome, diabetes and cardiovascular disease) by increasing one's daily intake of fruit and vegetables and engaging in moderate or high intensity physical activity.[199, 203]

Mental Health

Definition

Mental health is described as a state of well-being that allows a person to cope with the normal stresses of life and to be productive.[204]

Mental health contributes to productivity, as well as individual and family well-being. Mental health problems are an important cause of ill health and disability. Due to limitations with mental health data (e.g., data quality, lack of consistency in definitions and classifications, limited data collected on immigrant status and ethnicity), this section only presents information about self-rated mental health, self-perceived stress, suicide and consultations with mental health providers.

Measurement

Measuring Mental Health

In Canada, mental health at the population level is measured by gathering self-reported information from surveys on:

- mental health disorders;
- mental health problems;
- well-being; and
- access to mental health resources.

Since 2002, Canadian researchers have used data from a number of health surveys to explore the mental health of immigrants. Unfortunately, mental health data from self-reported surveys is subjective and may be reported inconsistently among ethnic groups. Findings should be interpreted with caution.

Hospital discharge records, which are also a source of mental health data, are also subject to issues of data quality.

Mental Health Risk

While the prevalence of mental health problems is generally lower among recent immigrants, the demands for economic and social integration are emotionally taxing and put immigrants at risk for mental health problems.

Two years after arriving to Canada, 31% of immigrants in the Toronto CMA reported experiencing emotional problems in the previous 12 month period, including persistent feelings of sadness, depression and loneliness. Specifically:

- Females (34%) were more likely than males (28%) to report emotional problems.[C2]
- Refugees (38%) and economic class immigrants (34%) were more likely than family class immigrants (23%) to report experiencing emotional problems.[C2]

Four years after arriving in Canada:

- Refugees (40%) were more likely than family class immigrants (27%) to report experiencing emotional problems.[C3]
- West Asian/Arab immigrants were generally more likely than immigrants from White, Black, East/Southeast Asian and South Asian population groups to report experiencing emotional problems.[C3]

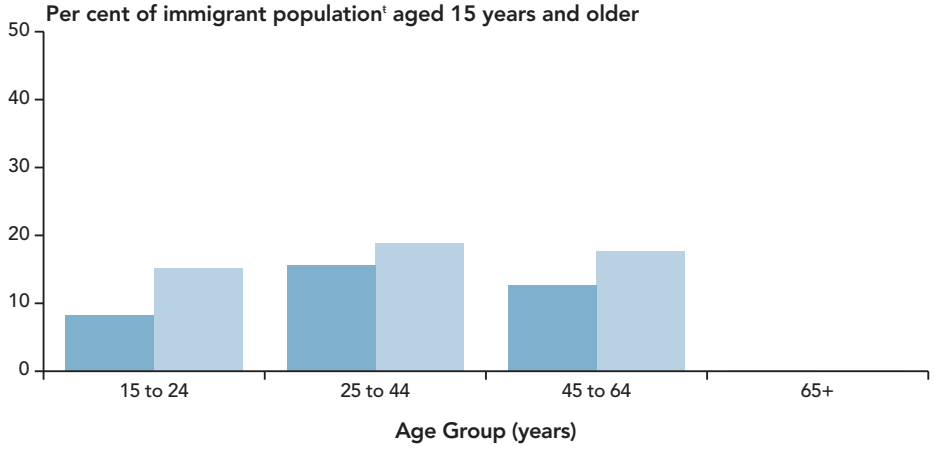
Self-Rated Mental Health of Peel Residents

In 2009/2010, the vast majority (95%) of Peel residents reported having excellent, very good or good self-rated mental health.[D1]

Self-Perceived Stress of Toronto CMA Residents

While stress is a normal response to life events, the experience of stress can contribute to poor health, including mental illness. Two years after arrival in Canada, 14% of recent immigrants in the Toronto CMA described their lives as very or extremely stressful.[C2] This self-perceived rating remained higher two years later (18%).[C3] Four years after arrival, immigrants in the economic class category (16%) were more likely than immigrants in the family class (8%) to report most days as very or extremely stressful.[C3] Self-perceived stress increased among family class immigrants between two and four years after arrival into the Toronto CMA (data not shown).[C3]

Figure 6.16
Stress† among Immigrants on Most Days by Age Group, Toronto CMAᵗ, Wave 2 and Wave 3



	15 to 24	25 to 44	45 to 64	65+
2 years after arrival Per cent (95% CI)	8.3 (6.1 – 11.3)	15.6 (13.9 – 17.5)	12.6 (9.6 – 16.3)	NR
4 years after arrival Per cent (95% CI)	15.2 (12.0 – 19.0)	18.9 (17.0 – 20.9)	17.7 (14.2 – 21.9)	NR

† Defined as very stressful or extremely stressful.
ᵗ CMA- Census Metropolitan Area.
Notes: Based on immigrants who arrived in Canada between October 1, 2000 and September 30, 2001.
Wave 2 and 3 data are based on two years and four years after arriving in Canada respectively.
95% CI reflects the 95% confidence interval of the estimate.
Source: Longitudinal Survey of Immigrants to Canada, 2005, Statistics Canada.

As illustrated in Figure 6.16, immigrants aged 15 to 24 years were less likely to report most days as very or extremely stressful as compared to immigrants in the 25 to 44 year age group.

After their first two years in Canada, immigrants who reported higher positive ratings for their general health also reported lower ratings for daily stress (data not shown). However, two years later, even immigrants who rated their health as good, very good or excellent reported an increase in stress (from 12% to 16%).[C1, C2]

The top five most important factors contributing to feelings of stress among immigrants in the Toronto CMA are:

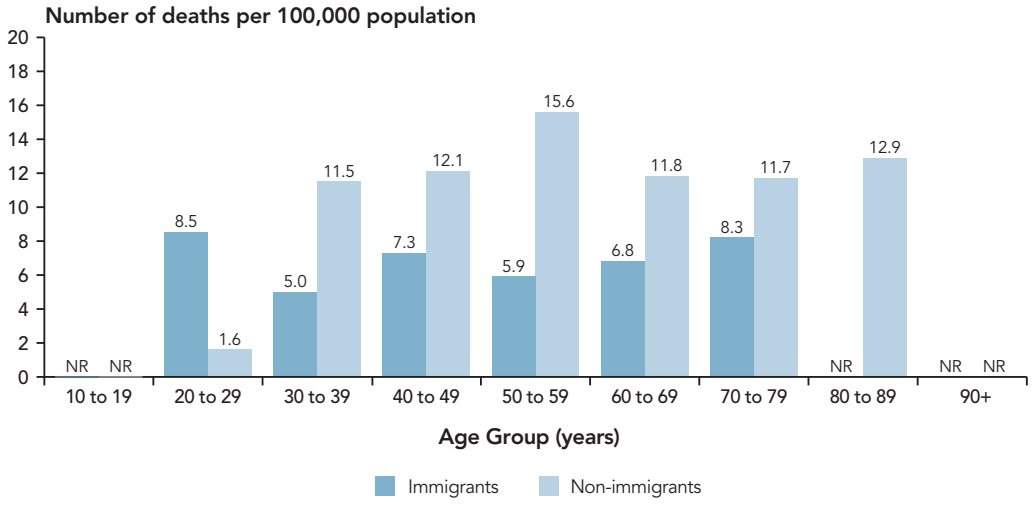
- time pressure;
- financial situations (e.g., debt, not enough money);
- own work situation (e.g., hours of work, working conditions);
- employment status (e.g., underemployment); and
- caring for own family.[C2]

Suicide Mortality in Peel

In Peel, between 2005 and 2007, suicide mortality was lower in immigrants compared to non-immigrants.[N, A3] This was consistent across all age groups with the exception of those 20 to 29 years of age where immigrants were more likely to have died from suicide (Figure 6.17).

Immigrants have the lowest suicide rates across most age groups.

Figure 6.17
Mortality from Suicide by Immigrant Status and Age Group, Peel, 2005-2007 Combined



NR = Not releasable due to small numbers.
Sources: Ontario Mortality Database 2005-2007, IntelliHEALTH, Ontario Ministry of Health and Long-Term Care; 2006 Census, Statistics Canada.

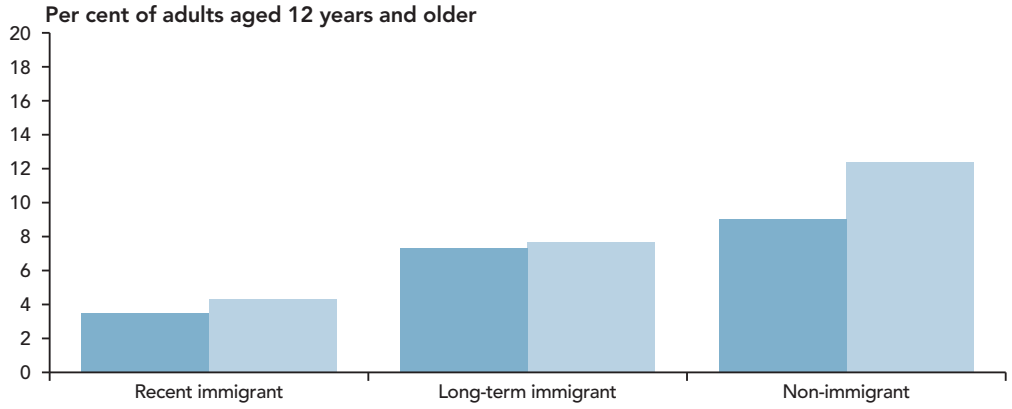
Consultations about Mental Health

A health assessment project that analyzed hospital discharge data and physician claims in three provinces from 1985 to 2000, indicated that immigrants (especially women), use mental health services less than Canadian-born residents.[213] Much about immigrants' access to mental health services is still unknown; however, services may not be viewed as accessible, appropriate or acceptable.[214] Reluctance to seek help for mental health problems can be attributed to systemic factors (e.g., lack of culturally competent care models), as well as individual factors (e.g., lack of awareness of services, stigma of accessing psychiatric services).[214]

In 2009/2010, 7% of Peel and 11% of Ontario residents had a consultation with a health professional about their emotional or mental health within the past year.[D1] Recent immigrants are the least likely to consult with health professionals about their mental health as compared to long-term immigrants and non-immigrants (Figure 6.18).

Figure 6.18

Self-Reported Past Year Consultations† about Mental Health by Immigrant Status, Peel and Ontario, 2009/2010



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	3.5* (1.8 – 6.5)	7.3* (4.9 – 10.6)	9.0 (7.0 – 11.5)
Ontario % (95% CI)	4.3 (3.1 – 5.8)	7.7 (6.7 – 8.9)	12.4 (11.8 – 13.0)

† Consultation with a health professional about emotional or mental health.
* Use estimate with caution.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

chapter 7

RISK FACTORS FOR CHRONIC DISEASE AND POOR HEALTH

Key Messages

- Immigrants in Peel are less likely to be active than non-immigrants.
- Recent immigrant children are more likely to exceed two hours of screen time per day.
- In Peel, immigrant youth are less likely to be current smokers and less likely to use alcohol and illicit drugs compared to those who are Canadian-born.
- The use of alcohol and illicit drugs is higher among third-generation Canadian youth compared to their first-generation counterparts.
- Certain high-risk sex behaviours are less prevalent among immigrants than non-immigrants in Peel and Ontario.

While most chronic diseases are preventable, certain behaviours can increase an individual's overall risk of becoming ill. This chapter will focus on the risk factors that are associated with chronic diseases. These factors include physical activity, nutrition and diet, tobacco, alcohol and illicit drug use, as well as sexual activity.

Physical Activity

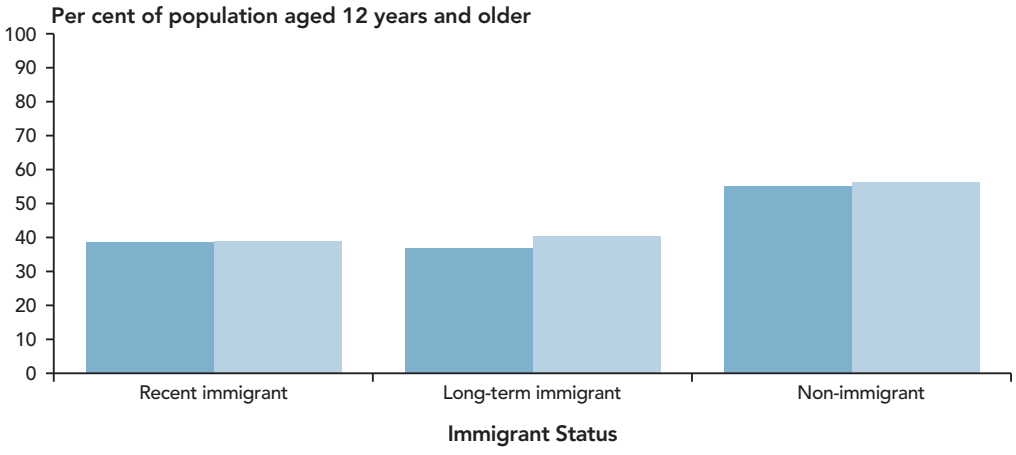
Regular physical activity is recommended as part of a healthy lifestyle as it provides many benefits including: building cardiorespiratory fitness; reducing the risk of Type 2 diabetes,[215] as well as managing diabetes.[215, 216] Good aerobic fitness will also reduce the risk for all-cause mortality and cardiovascular mortality.[217]

Canadian Guidelines for Physical Activity suggest that in order to achieve health benefits, individuals should try to reach the following recommendations:

- Adults aged 18 years and older should accumulate 150 minutes of moderate- to vigorous-intensity aerobic physical activity each week, in bouts of 10 minutes or more (with the addition of muscle and bone strengthening exercises two days a week).
- Children and youth aged five to 17 years should accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily (which should include vigorous-intensity three days a week and activities that strengthen muscle and bone at least three days a week).[218]

Canadian-born individuals are more likely to be physically active.[6, 219] This is similar to the population in Peel, where immigrants are less physically active outside of work (i.e., during their leisure time) than non-immigrants (Figure 7.1). There are no data on physical activity levels at work by immigrant status.

Figure 7.1
Physical Activity† During Leisure Time by Immigrant Status, Peel and Ontario, 2009/2010



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	38.6 (31.6 – 46.2)	36.8 (31.9 – 42.0)	55.1 (50.8 – 59.3)
Ontario % (95% CI)	38.9 (35.5 – 42.4)	40.4 (38.2 – 42.6)	56.2 (55.2 – 57.1)

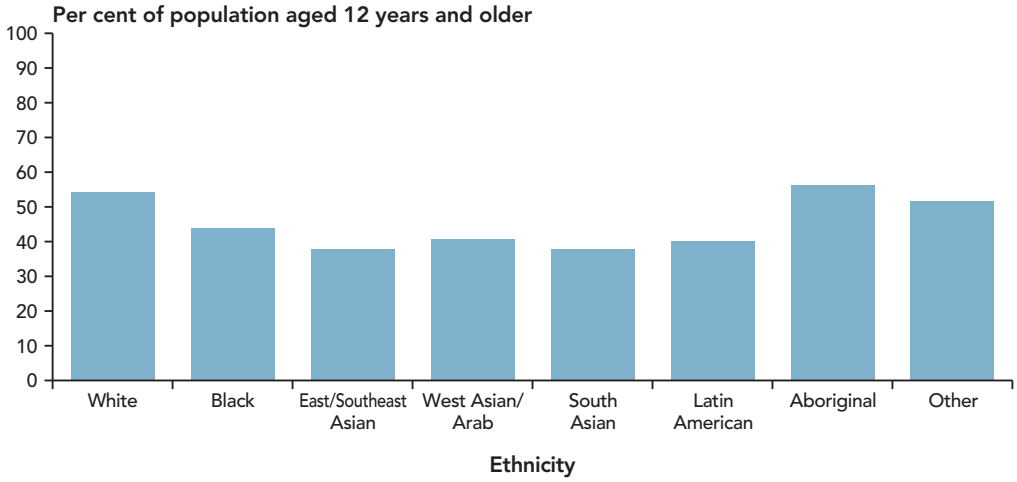
† Active or moderately active during leisure time.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Physical activity is less common among recent and long-term immigrants in Peel.

Women are less likely to participate in physical activity due to lack of time combined with cultural norms and expectations (such as family commitments and household responsibilities). Barriers to physical activity among culturally and linguistically diverse immigrants to western society, for both men and women, may also include: religious fasts, language barriers, differences in knowledge of the importance of exercise and differing social norms.[220]

As in the rest of Canada, rates of physical activity vary by ethnic origin. Ontario residents of White ethnicity are more likely to be physically active in their leisure time compared to other ethnicities (Figure 7.2).

Figure 7.2
Physical Activity† During Leisure Time by Ethnicity, Ontario, 2009/2010

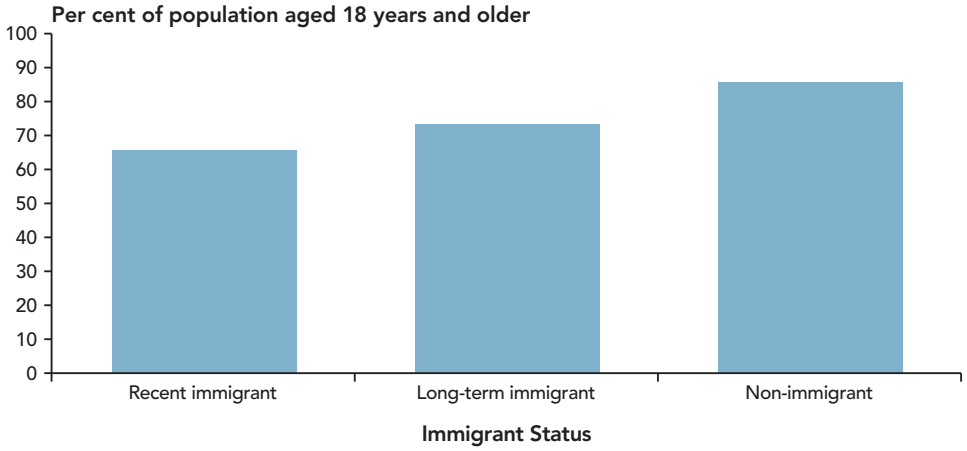


	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Per cent (95% CI)	54.2 (53.3 – 55.2)	43.7 (38.0 – 49.5)	37.6 (33.9 – 41.4)	40.5 (32.2 – 49.4)	37.7 (33.7 – 41.9)	40.1 (30.8 – 50.2)	56.1 (51.5 – 60.6)	51.5 (44.1 – 58.9)

† Active or moderately active during leisure time.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

In 2009, recent and long-term immigrants in Peel were less likely than non-immigrants to know where to find walking, biking or nature trails in Peel (Figure 7.3).

Figure 7.3
Knowledge of Walking, Biking or Nature Trails in Peel by Immigrant Status, Peel, 2009



	Recent immigrant	Long-term immigrant	Non-immigrant
Per cent (95% CI)	65.7 (51.5 – 79.8)	73.2 (69.4 – 77.1)	85.8 (82.9 – 88.6)

Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Rapid Risk Factor Surveillance System, 2009, Peel Public Health.

In order to increase physical activity participation in Peel, consideration must be given to accessibility, as well as the interests and preferences of its residents. A better understanding of these concerns and needs will help create policies and programs to overcome barriers to physical activity. For example, recent immigrants (90%) are more likely to report that walking distance from home to their place of work is important or very important compared to long-term immigrants (73%) and non-immigrants (66%).[P1] In addition, both recent immigrants (93%) and long-term immigrants (88%) are more likely than their Canadian-born counterparts (81%) to feel that it is important to have recreational facilities within walking distance form home.[P1]

Encouraging active transport, including walking and bicycle use, throughout Peel will also help increase opportunities of daily physical activity.

Peel Facts

Walking to work is uncommon in Peel and bicycling to work is even less common. Approximately 4% of recent immigrants, 2% of long-term immigrants and 3% of non-immigrants walk to work.[A3] Less than 0.5% of Peel residents bicycle to work, regardless of immigrant status. However, as described in Chapter 2 of this report, in Peel, a larger proportion of recent immigrants (25%) use public transit to get to work compared to long-term (12%) and non-immigrants (11%).[A3]

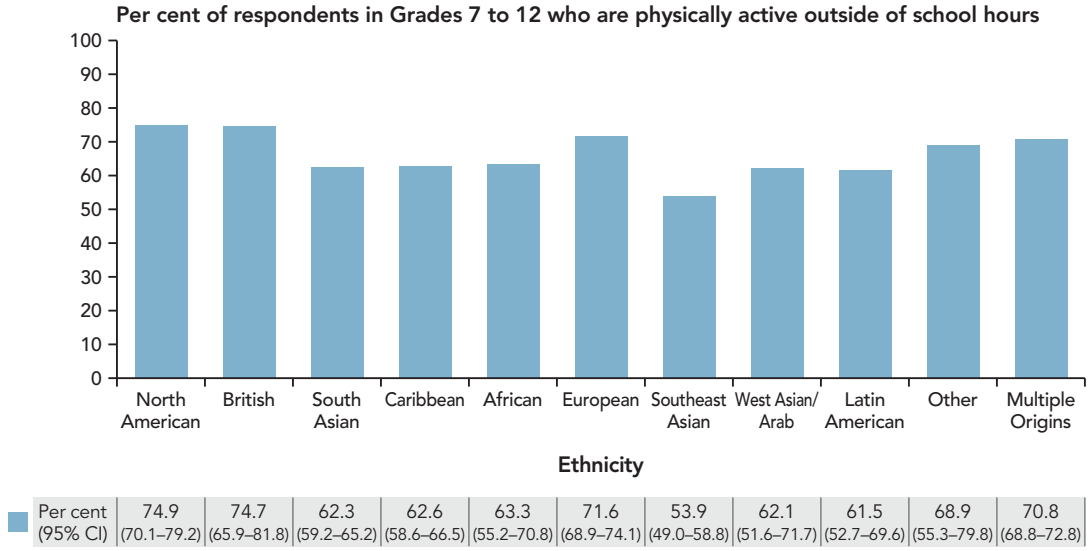
Children and Youth

Canadian children and youth spend an average of 8.6 hours per day (or 62% of their waking hours) being sedentary.[221]

In Peel, participation in school organized physical activity for students in Grades 7 to 12 does not vary by immigrant status or ethnicity; however, there are differences outside of school hours:

- Immigrant students (62%) are less likely than Canadian-born students (68%) to report that they are usually physically active outside of school hours.[O]
- Physical activity outside of school hours was lowest among students belonging to the Southeast Asian (54%) ethnic group compared to other ethnic groups (Figure 7.4).

Figure 7.4
Physical Activity Outside† of School Hours by Ethnicity, Peel, 2011



	North American	British	South Asian	Caribbean	African	European	Southeast Asian	West Asian/ Arab	Latin American	Other	Multiple Origins
Per cent (95% CI)	74.9 (70.1–79.2)	74.7 (65.9–81.8)	62.3 (59.2–65.2)	62.6 (58.6–66.5)	63.3 (55.2–70.8)	71.6 (68.9–74.1)	53.9 (49.0–58.8)	62.1 (51.6–71.7)	61.5 (52.7–69.6)	68.9 (55.3–79.8)	70.8 (68.8–72.8)

† At least three days per week (for at least 60 minutes per day).
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Sedentary Behaviour

For children and youth under the age of 18 years, the Canadian Sedentary Guidelines recommend that individuals limit their recreational screen time to no more than two hours per day and limit sedentary motorized transport, extending sitting and time spent indoors throughout the day.[218] Examples of sedentary behaviour include:

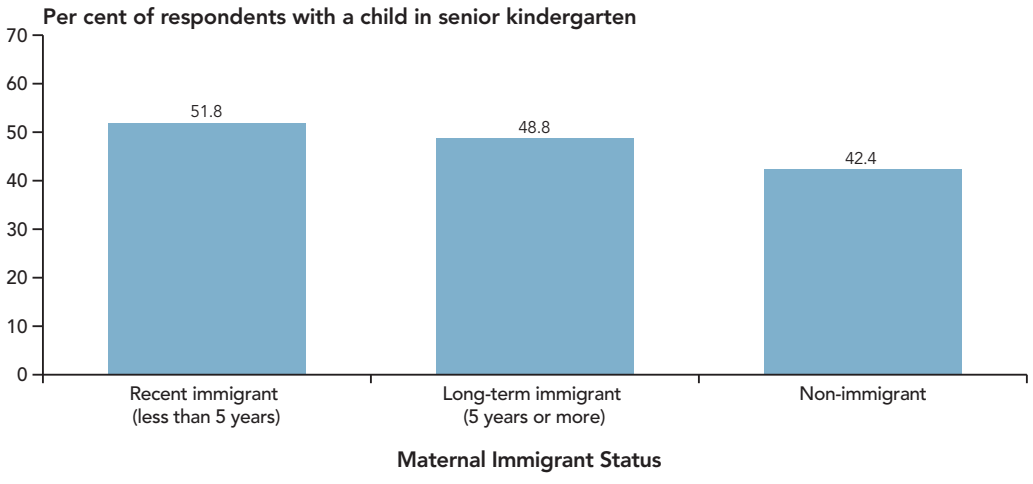
- sitting for long periods of time;
- using motorized transportation (such as a bus or car);
- watching television;
- playing passive video games; and
- playing on the computer.[218]

Excessive screen time (more than two hours per day) has been associated with an increased risk of overweight and obesity, decreased fitness, lowered scores for self-esteem and pro-social behaviour, and decreased academic achievement.[222] Sedentary behaviour independent of

physical activity levels are associated with increased risk of cardio-metabolic disease and a variety of physiological and psychological problems.[223]

In Peel, senior kindergarten students whose mothers are recent immigrants to Canada are significantly more likely to have two hours or more of screen time per day (52%), compared to those whose mothers were born in Canada (42%) (Figure 7.5).

Figure 7.5
Screen Time† of Approximately Two or More Hours Per Day among Senior Kindergarten Students by Maternal Immigrant Status, Peel, 2010

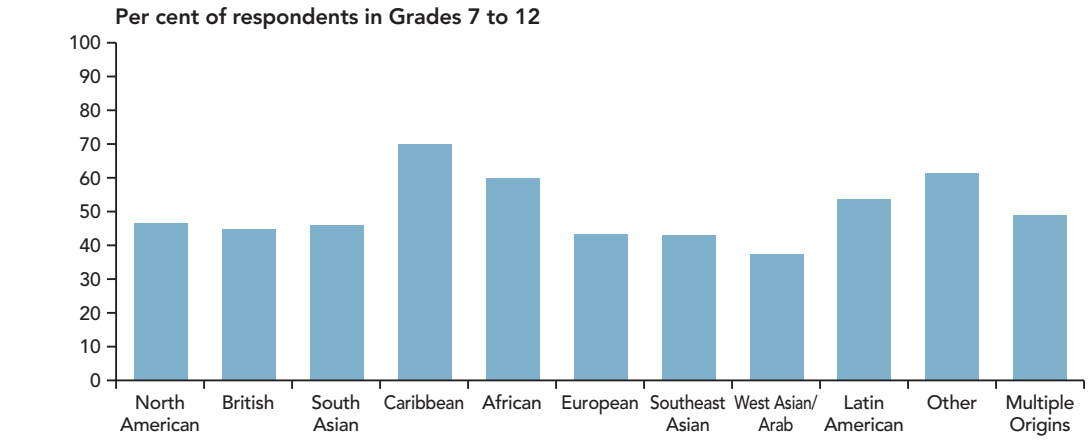


† Screen time includes time spent watching television, using the computer and playing video games.
Notes: A conservative esimate of screen time. See Data Methods section for more details.
Source: Senior Kindergarten Census, 2010, Region of Peel.

Almost half (49%) of Peel students in Grades 7 to 12 watch television two or more hours per day.[O] The proportion of youth watching television for two or more hours per day varies by ethnicity (Figure 7.6).

Figure 7.6

Students Who Spend Two or More Hours Per Day Watching Television† by Ethnicity, Peel, 2011



	North American	British	South Asian	Caribbean	African	European	Southeast Asian	West Asian/ Arab	Latin American	Other	Multiple Origins
Per cent (95% CI)	46.5 (39.2–54.1)	44.7 (38.2–51.3)	46.1 (43.7–48.5)	69.9 (66.7–72.9)	60.0 (50.2–69.0)	43.4 (39.7–47.2)	43.0 (37.5–48.7)	37.3 (32.3–42.6)	53.7 (45.6–61.5)	61.5 (49.1–72.6)	49.1 (46.5–51.8)

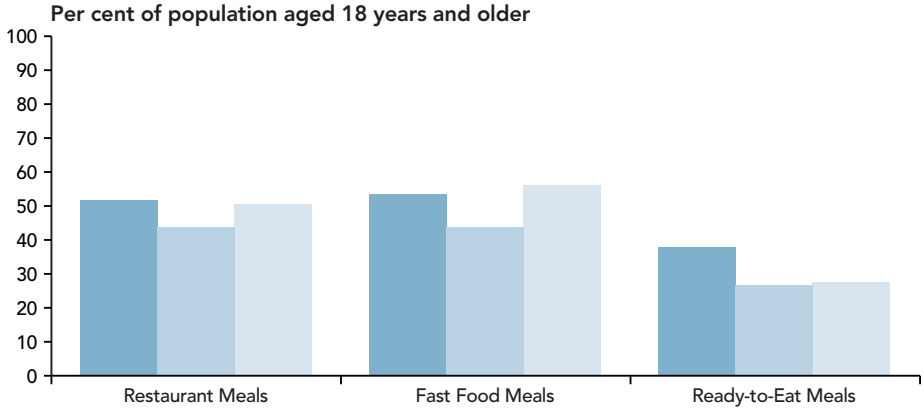
† Television (including DVDs and videos).
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Nutrition and Diet

The acculturation process may result in changes to one's dietary patterns and preferences over time. Most developed countries have a dietary pattern that is high in calories, saturated fat and simple sugars; and low in dietary fibre, fruit and vegetables. These types of dietary changes may increase the risk of chronic diseases, specifically obesity and Type 2 diabetes.[167, 224]

In Peel, long-term immigrant adults are less likely to eat fast food meals compared to non-immigrants (Figure 7.7).[P2]

Figure 7.7
Past Week Consumption of Meals/Snacks Prepared Outside the Home by Type of Meal/Snack and Immigrant Status, Peel, 2009



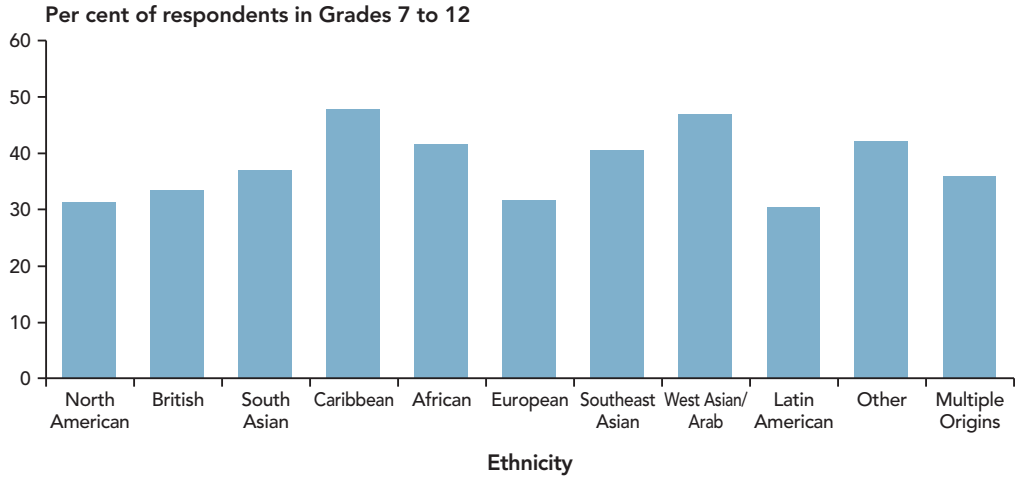
	Restaurant Meals	Fast Food Meals	Ready-to-Eat Meals
Recent Immigrant Per cent (95% CI)	51.7 (37.8 – 65.7)	53.4 (39.5 – 67.4)	37.9* (24.4 – 51.5)
Long-Term Immigrant Per cent (95% CI)	43.8 (39.6 – 48.1)	43.6 (39.3 – 47.8)	26.3 (22.5 – 30.1)
Non-Immigrant Per cent (95% CI)	50.4 (46.3 – 54.4)	56.0 (51.9 – 60.0)	27.6 (23.9 – 31.2)

* Use estimate with caution.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Rapid Risk Factor Surveillance System, 2009, Peel Public Health.

Approximately seven out of 10 (69%) senior kindergarten students in Peel eat restaurant food at least once a week, but not every day. This portion is significantly higher among students whose mothers are recent immigrants than those with mothers who immigrated to Canada more than five years ago (data not shown).[Q]

In 2011, 37% of Peel students in Grades 7 to 12 ate meals prepared or purchased at a fast food restaurant at least once per week.[O] There is no difference by immigrant status; however, consumption of fast food restaurant meals varies between ethnic groups (Figure 7.8).

Figure 7.8
Eating Fast Food Restaurant Meals At Least Once a Week by Ethnicity, Peel, 2011



	North American	British	South Asian	Caribbean	African	European	Southeast Asian	West Asian/ Arab	Latin American	Other	Multiple Origins
Per cent (95% CI)	37.8 (31.3–44.7)	33.3 (25.3–42.3)	36.8 (32.6–41.3)	47.7 (43.1–52.2)	41.5 (32.8–50.7)	31.5 (28.5–34.6)	40.4 (35.7–45.3)	46.8 (39.7–53.9)	30.3 (22.9–39.0)	42.0 (31.6–53.0)	35.7 (32.7–38.8)

Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Breakfast Intake

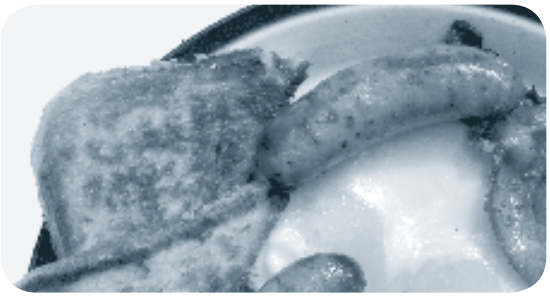
Eating breakfast has been associated with a positive effect on cognition, academic performance and concentration amongst school children. The consumption of breakfast can also be associated with lower stress levels and a lower BMI.[225]

In Peel, a significantly higher proportion of Canadian-born mothers report that their senior kindergarten children eat breakfast every day (84%), compared to recent immigrant mothers (77%) and mothers who have lived in Canada for five years or more (78%) (Table 7.1).

Table 7.1
Frequency of Eating Breakfast among Senior Kindergarten Students by Maternal Immigrant Status, Peel, 2010

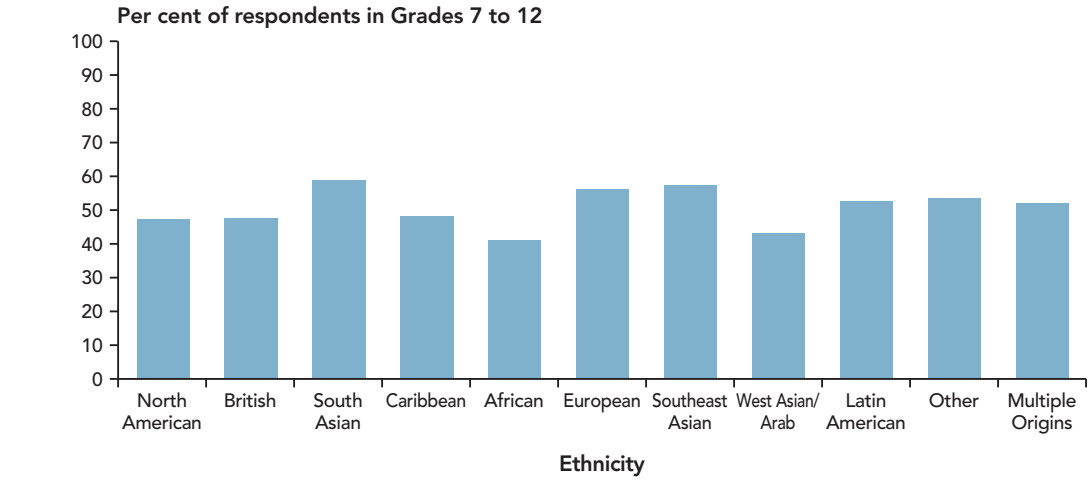
Frequency of Eating Breakfast	Recent Immigrant (less than 5 years)	Long-Term (5 or more years)	Non-Immigrant
Every day	77.1	77.6	83.6
5 to 6 times a week	5.1	4.3	2.6
3 to 4 times a week	4.8	4.7	1.6
1 to 2 times a week	3.0	3.0	1.1
Never	1.1	0.6	NR

NR = Not releasable due to small numbers.
Source: Senior Kindergarten Census, 2010, Region of Peel.



In older children, this difference is not observed. Fifty-four per cent of students in Grades 7 to 12 eat breakfast daily. There is no relationship between immigrant status and eating breakfast daily for students in Grades 7 to 12. However, consumption of breakfast daily differs for ethnic groups (Figure 7.9).

Figure 7.9
Eating Breakfast Daily by Ethnicity, Peel, 2011



	North American	British	South Asian	Caribbean	African	European	Southeast Asian	West Asian/ Arab	Latin American	Other	Multiple Origins
Per cent (95% CI)	47.3 (40.4–54.3)	47.5 (38.8–56.3)	58.9 (55.4–62.3)	48.1 (42.4–53.7)	41.1 (32.5–50.2)	56.0 (52.3–59.7)	57.2 (53.2–61.1)	43.2 (36.3–50.3)	52.6 (43.3–61.7)	53.4 (43.9–62.7)	51.9 (48.5–55.4)

Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Fruit and Vegetables Consumption

Diets with little fruit and vegetables often lack fibre and can increase the risk of obesity and chronic disease later in life. In Peel, 48% of residents eat fruit and vegetables five times a day or more often. While the prevalence of fruit and vegetable consumption is too low, there are no differences by immigrant status or ethnicity.[D1]

The majority of senior kindergarten children eat fruit and vegetables daily (91%). A significantly higher proportion of mothers who were born in Canada reported that their child ate fruit and vegetables at least once per day (94%), compared to mothers who are recent immigrants (90%) and those who immigrated to Canada five years ago or longer (92%).[Q]

Consumption of Beverages

In Peel, one-fifth of students (20%) in Grades 7 to 12 drink soft drinks at least once per day.[O] There is no difference in soft drink consumption by immigrant status.

One out of five Peel children consumes sweetened drinks at least once a day.

Iron Deficiency Anemia

Recent evidence-based clinical guidelines suggest that recent immigrant women (especially those of reproductive age) and immigrant children aged one to four years should be screened for iron deficiency anemia.[46]

The main risk factors for iron-deficiency anemia are:

- low iron intake (common in vegetarian diets),
- poor absorption of iron related to diets high in foods that inhibit the body's ability to absorb iron, and
- periods of rapid growth where the body has a high need for iron (e.g., adolescence and pregnancy).[226]

Immigrants from developing nations are also at risk for being iron deficient due to their genetic predisposition for red blood cell disorders, and increased risk for exposure to infections, such as hookworm or malaria.[46] Iron deficiency anemia can result in poor pregnancy outcomes,[227] such as having a baby who is born preterm, delivering a baby of low birth weight[228] and/or poor cognitive development.

Did You Know

Peel Public Health developed an Eating Behaviours and Food Skills Survey, which was administered in November 2011. The purpose of this project was to collect data on the eating behaviours and food skills of Peel residents.

Eating behaviours are influenced by a variety of determinants, such as: individual and family factors (e.g., appetite and parental influences); the food environment (e.g., advertising and portion sizes); food skills; and economic, social and cultural factors (e.g., income and culture). Currently, there are limited data available on why and how people eat the way they do. Assessing these behaviours will help guide future programming, as well as help us to better understand the eating behaviours of our population over time.

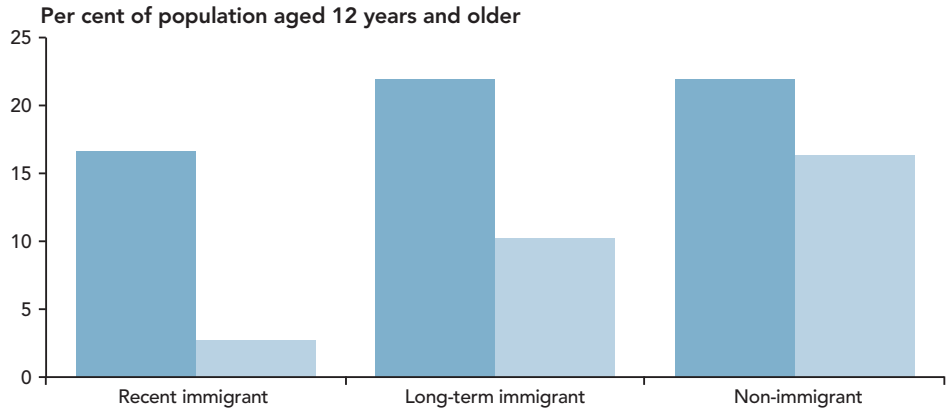
Tobacco Use

Smoking can lead to a wide variety of health consequences including: oral cancer, esophogeal cancer, skin damage, chronic pulmonary obstructive disease (COPD), lung cancer, stomach ulcers, bladder cancer, heart disease, erectile dysfunction, cervical cancer, peripheral vascular disease and cataracts.

Exposure to second-hand smoke can also be harmful, especially to children, and is related to adverse health effects such as: asthma, respiratory infections, middle ear infections, fetal growth impairment and sudden infant death syndrome. It is also suspected to cause reduced lung function, worsening of cystic fibrosis and to have an adverse effect on cognition and behaviour in children.[229]

In Canada, immigrants are less likely to smoke than their Canadian-born counterparts.[1, 230, 231] However, smoking rates for both groups are higher among males compared to females. In Peel, immigrant males (both recent and long-term) smoke at a similar rate as non-immigrant males, while immigrant females are less likely to smoke than non-immigrant females (Figure 7.10).

Figure 7.10
Current Smoking by Immigrant Status and Sex, Peel, 2005, 2007/2008, 2009/2010 Combined

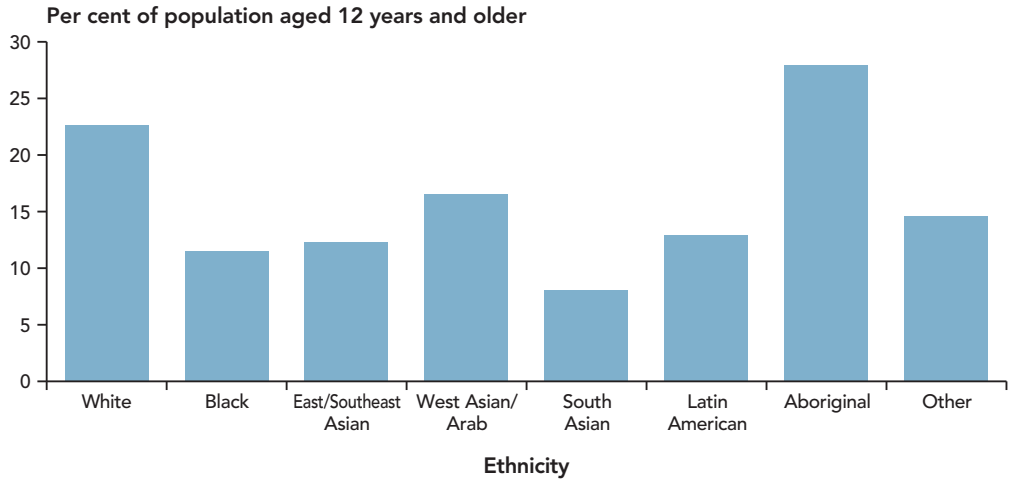


	Recent immigrant	Long-term immigrant	Non-immigrant
Male Per cent (95% CI)	16.6 (12.7 – 21.5)	21.9 (18.2 – 26.0)	21.9 (19.3 – 24.7)
Female Per cent (95% CI)	2.7* (1.6 – 4.6)	10.2 (7.7 – 13.3)	16.3 (14.0 – 19.0)

* Use estimate with caution.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2005, 2007/2008, 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Furthermore, there are differences in smoking behaviour among some ethnic groups in Peel. For example, those who self-identify as being White are more likely than other ethnic groups to be current smokers, with the exception of residents of West Asian/Arab and Aboriginal ethnicity (Figure 7.11).

Figure 7.11
Current Smoking Rate by Ethnicity, Peel 2000/2001, 2003, 2005, 2007/2008, 2009/2010 Combined



	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Per cent (95% CI)	22.6 (21.3 – 24.0)	11.5 (8.4 – 15.5)	12.3 (9.3 – 16.0)	16.5* (11.5 – 23.1)	8.1 (6.3 – 10.4)	12.9* (7.8 – 20.5)	27.9* (13.7 – 48.7)	14.6 (10.7 – 19.5)

† Diagnosed by a physician.
* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2000/20001, 2003, 2005, 2007/2008, 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Smoking Amongst Youth

Smoking is more common among Canadian-born youth than immigrant youth in Ontario.[232, 233] Similarly, in Peel, immigrant youth (97%) are more likely than non-immigrant youth (93%) to be non-smokers.[O] Among youth who do smoke, there is no significant difference between immigrants and non-immigrants in the number of cigarettes smoked each day.

There is, however, variation in the proportion of Grades 7 to 12 students who are non-smokers by ethnicity.[O] Latin-American (98%) and South Asian (97%) youth are more likely than British (90%) and European (92%) youth to be non-smokers.[O] In addition, Grades 7 to 12 students of South Asian and Southeast Asian origin are less likely than their British and North American counterparts to have ever tried a cigarette.[O]

Youth are more likely to smoke if 50% or more of their friends are smokers.[232]

Conversely, youth who have parents who are non-smokers, and have few friends who smoke are less likely to adopt smoking.[233]

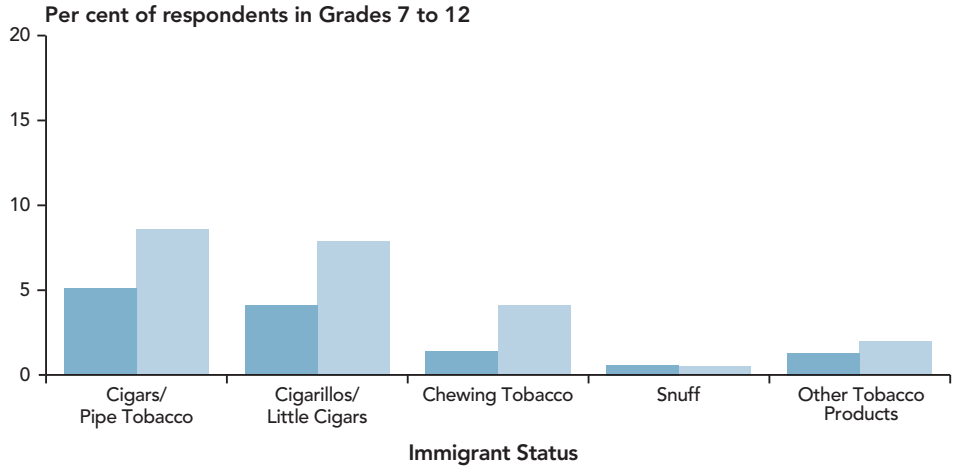
Alternative Tobacco Products

Alternative tobacco products allow the user to consume tobacco in a form other than cigarettes. Alternative tobacco products are listed below; however, we do not have data about the use of many alternative tobacco products in Peel.

- Cigars/pipe tobacco.
- Cigarillos/little cigars.
- Chewing tobacco.
- Snuff – finely ground or shredded tobacco that is packaged loose in tins or in sachets similar to tea bags.
- Bidis – imported from India, bidis are thin sticks of tobacco wrapped in tendu leaves and tied with string.
- Clove Cigarettes (e.g., Kreteks) – manufactured in Indonesia and distributed worldwide, clove cigarettes are made of a blend of ground cloves and tobacco.
- Electronic cigarettes (E-cigarettes) – marketed as a healthier alternative to regular cigarette use, e-cigarettes are battery-powered vessels that look like cigarettes, but do not contain any tobacco. Some e-cigarettes contain nicotine and their use can result in nicotine addiction.
- Waterpipe smoking (also known as hookah) – The waterpipe has been used for centuries in the South-East Asia and Middle Eastern regions to smoke shisha and its use is spreading globally.[234] The shisha used in a waterpipe is typically a blend of tobacco leaves, fruit pulp, honey or molasses and glycerine, and comes in a variety of flavours, such as mango, apricot and mint. Non-tobacco varieties of shisha are also available.
- Chew - consists of flavoured, loose tobacco leaves that are placed between the user's cheeks and gum and held there, while the user spits out or swallows the tobacco juices.
- Gutkah and Paan – a type of smokeless tobacco sold in foil packets or sachets and tins.
- Dissolvable tobacco products (also known as hard snuff) – a product that is made from compressed tobacco powder that dissolves completely in the user's mouth; similar to a hard candy.[235]

In addition to cigarettes, Grades 7 to 12 students consume other tobacco products, although to a lesser extent than cigarettes. Figure 7.12 indicates that non-immigrants are more likely than immigrants to use cigars and pipe tobacco, cigarillos and chewing tobacco.

Figure 7.12
Use of Other Tobacco Products by Immigrant Status, Peel, 2011



	Cigars/ Pipe Tobacco	Cigarillos/ Little Cigars	Chewing Tobacco	Snuff	Other Tobacco Products
Immigrant % (95% CI)	5.1 (3.7 – 7.0)	4.1 (3.2 – 5.2)	1.4* (0.9 – 2.0)	0.6* (0.3 – 1.1)	1.3* (0.8 – 2.1)
Non-immigrant % (95% CI)	8.6 (7.7 – 9.6)	7.9 (6.8 – 9.3)	4.1 (3.1 – 5.3)	0.5* (0.3 – 0.9)	2.0 (1.5 – 2.8)

* Use estimate with caution.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Did You Know

Peel Public Health has produced a report entitled ***Burden of Tobacco: The Use and Consequences of Tobacco in Peel, 2012***. For additional information about tobacco use, read this report at peelregion.ca/health/reports.

Alcohol and Drugs

The use of substances, such as alcohol and illicit drugs, can lead to a variety of behavioural and cognitive changes, and repeated use can lead to addiction. Substance abuse increases with age, peaks in mid-to-late 20s, and subsides with life changes such as getting married, starting full-time work and having children.[242] Among youth, peer groups, school and environment can affect the overall risk of substance abuse.

Alcohol Use

Canada's Low-Risk Drinking Guidelines suggest that long-term health risks can be decreased by drinking no more than 10 drinks a week (or no more than two drinks a day) for women and no more than 15 drinks a week (or no more than three drinks a day) for males. Adverse effects of alcohol depend on how much and how often an individual consumes alcohol.[243]

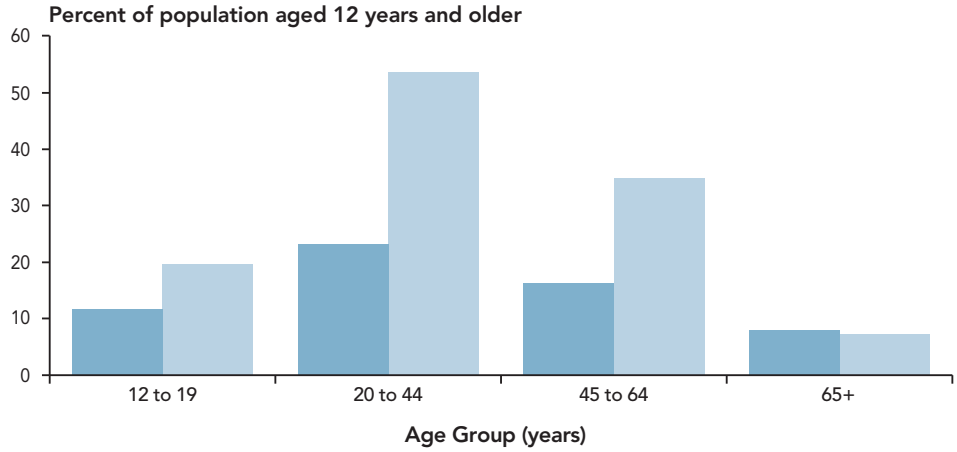
Heart health benefits associated with drinking a glass or alcohol every other day, are only relevant from middle age onwards (i.e., when the risk of cardiovascular diseases increases).[243] The risk of developing many other chronic health conditions (such as cancers of the breast, colon, rectum, liver, esophagus, mouth, larynx and pharynx, as well as liver disease, pancreatitis, alcohol dependence and mental health problems)[244, 245] increases with even low

levels of alcohol consumption (e.g., 1-2 drinks per day).

Newcomers to Canada are less likely to binge drink (have five or more drinks on one occasion in the past year) and be weekly drinkers compared to Canadian-born adults.[231] In Peel, recent and long-term immigrants are less likely than non-immigrants to binge drink.[D1] This is true across all age groups between 12 and 64 years of age (Figure 7.13).

Figure 7.13

Proportion of Binge Drinkers in Past 12 Months by Immigrant Status and Age Group, Peel 2000/2001, 2003, 2005, 2007/2008, 2009/2010 Combined

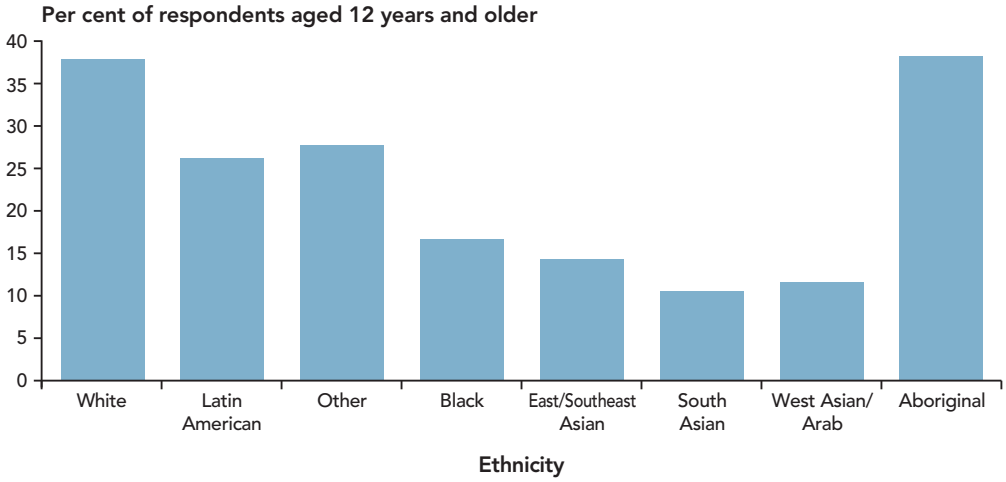


	12 to 19	20 to 44	45 to 64	65+
Immigrant % (95% CI)	11.7 (8.5 – 16.0)	23.2 (21.0 – 25.6)	16.3 (14.1 – 18.9)	7.9 (5.8 – 10.6)
Non-immigrant % (95% CI)	19.6 (17.0 – 22.3)	53.5 (50.9 – 56.1)	34.8 (30.9 – 38.8)	7.2 (5.2 – 9.8)

* Use estimate with caution.
Source: Canadian Community Health Survey 2000/2001, 2003, 2005, 2007/2008, 2009/2010, Statistics Canada Share File, Ontario Ministry of Health and Long-Term Care.

Non-European immigrants, such as Asians and South Asians are much less likely to drink alcohol and binge drink.[246, 247] Immigrant women are also less likely to drink weekly or to binge drink.[246] Ethnic variations of binge drinking are portrayed in Figure 7.14.

Figure 7.14
Past Year Binge Drinkers by Ethnicity, Peel 2000/2001, 2003, 2005, 2007/2008, 2009/2010 Combined



	White	Latin American	Other	Black	East/Southeast Asian	South Asian	West Asian/ Arab	Aboriginal
Per cent (95% CI)	37.9 (36.3 – 39.5)	26.2* (18.6 – 35.6)	27.8 (22.3 – 33.9)	16.7 (13.4 – 20.7)	14.3 (11.6 – 17.4)	10.6 (8.8 – 12.7)	11.6* (7.4 – 17.9)	38.2* (20.0 – 60.4)

* Use estimate with caution.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2000/2001, 2003, 2005, 2007/2008, 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Alcohol use is lower among immigrant youth compared to Canadian-born youth.[248, 249] Some of the factors associated with low rates of alcohol use among this group include:

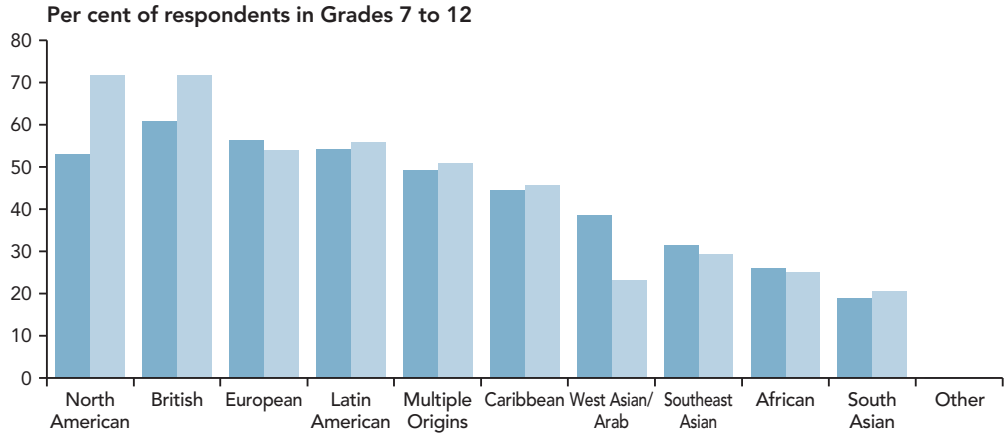
- being female;
- having a strong relationship with one's parent;
- having obtained a high school education; and/or
- being involved with community (e.g., participating in community activities).

In Ontario, the use of alcohol is 1.5 times higher in third generation Canadian youth compared to those who are first generation Canadians.[249]

In Peel, Canadian-born students (46%) are more likely than students born outside of Canada (26%) to have ever had a drink of alcohol (more than just a sip). This is observed for both males and females (data not shown).[O] Having ever had an alcoholic drink varies by ethnicity (Figure 7.15). Binge drinking occurs more frequently among non-immigrant youth than in their immigrant counterparts (Figure 7.16).

Figure 7.15

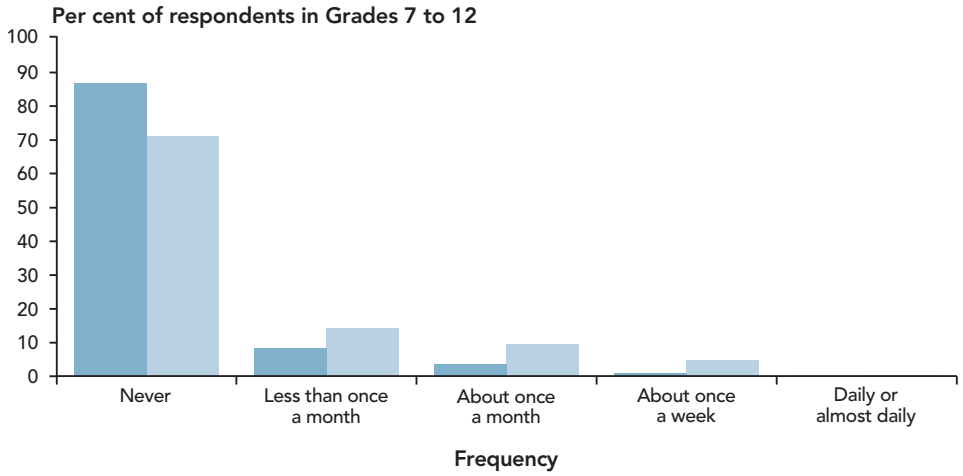
Proportion of Students That Have Ever Had an Alcoholic Drink (More Than Just a Sip) by Ethnicity and Sex, Peel, 2011



	North American	British	European	Latin American	Multiple Origins	Caribbean	West Asian/ Arab	Southeast Asian	African	South Asian	Other
Male % (95% CI)	52.9 (43.5–62.1)	60.8 (51.3–69.5)	56.3 (49.6–62.8)	54.1 (37.9–69.6)	49.1 (42.7–55.6)	44.4 (34.6–54.6)	38.4* (22.4–57.4)	31.3 (26.5–36.6)	26.0* (15.1–41.0)	18.8 (13.4–25.8)	NR
Female % (95% CI)	71.7 (60.7–80.6)	71.6 (60.5–80.6)	53.8 (46.0–61.4)	55.7 (42.4–68.2)	50.8 (45.9–55.7)	45.7 (38.4–53.2)	23.1* (15.1–33.7)	29.2 (23.0–36.2)	25.0* (17.1–35.0)	20.6 (15.2–27.2)	NR

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Figure 7.16
Frequency of Binge Drinking by Immigrant Status, Peel, 2011



	Never	Less than once a month	About once a month	About once a week	Daily or almost daily
Immigrant % (95% CI)	86.7 (82.2 – 90.1)	8.4 (6.1 – 11.5)	3.5* (2.3 – 5.2)	1.0* (0.5 – 1.9)	NR
Non-immigrant % (95% CI)	71.1 (67.7 – 74.3)	14.2 (12.7 – 15.7)	9.6 (8.0 – 11.3)	4.8* (4.0 – 5.8)	0.3* (0.2 – 0.5)

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Excludes non-drinkers.
Source: Student Health Survey 2011, Peel Public Health.

Illicit Drug Use

The use of illicit drugs typically begins during adolescence. Risk for drug abuse is highest during major transitions, such as entering high school or leaving home for university, college or work, and independent for the first time.[250] Drug use can vary over time, and patterns of use can be influenced by availability.[251]

Illicit drug use increases generationally among students in Grades 7 to 12, with lowest use among first generation and highest amongst youth who are third generation Canadian or higher.[249]

Did You Know

Poppy powder/Doda

Poppy powder is made by grinding seeds and buds from poppy plants. Part of the opioid family, the plant contains unknown levels of codeine and morphine. Common effects of poppy powder include, but are not limited to:

- quick, intense feelings of pleasure followed by a sense of well-being and a calm drowsiness,
- red eyes,
- slurred speech,
- mood swings,
- impotence,
- body aches,
- loss of appetite, and
- inability to concentrate.

Doda is the slang Punjabi term used to refer to poppy powder. The substance is being made and sold in local meat shops and flea markets in Brampton and Mississauga.

Did You Know

Khat or Qat

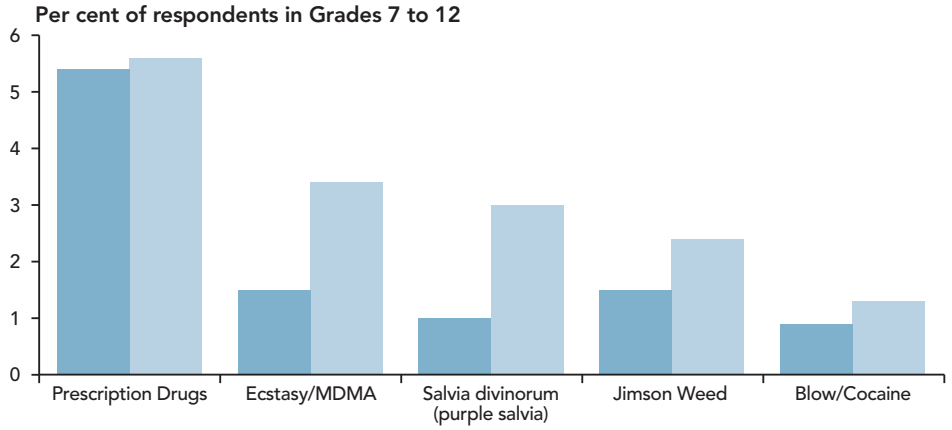
Commonly found in East Africa countries and Yemen, khat refers to the leaves and shoots of the Catha edulis Forsk plant.[253, 254] By chewing the plant, psychoactive substances are released, resulting in euphoric and energetic effects.[254] Migration has spread the use of this drug, though the extent it is used in Peel is unknown.

Did You Know

Salvia divinorum (purple salvia) is a species of sage belonging to the mint family, which is known to cause hallucinations and has the potential for abuse. Its effects vary from person to person, are unpredictable and can include: anxiety, depression or restlessness, out-of-body experiences, uncontrollable laughter, short-term memory loss, lack of physical co-ordination, slurred speech and loss of consciousness. The product is sold in a variety of forms, including fresh or dried leaves, seeds or liquids, and plant cuttings.[256]

The top five illicit drugs used by youth in Peel (excluding marijuana) are prescription drugs (not prescribed to the user), ecstasy/MDMA, salvia divinorum (purple salvia), jimson weed and cocaine.[O] Immigrant and non-immigrant youth use illicit drugs at a similar rate. However, non-immigrants (2.5%) are more likely than immigrants (0.8%) to use salvia divinorum (purple salvia) (Figure 7.17).

Figure 7.17
Lifetime Use of Five Most Frequently Used Illicit Drugs (Not Including Marijuana) by Immigrant Status, Peel, 2011



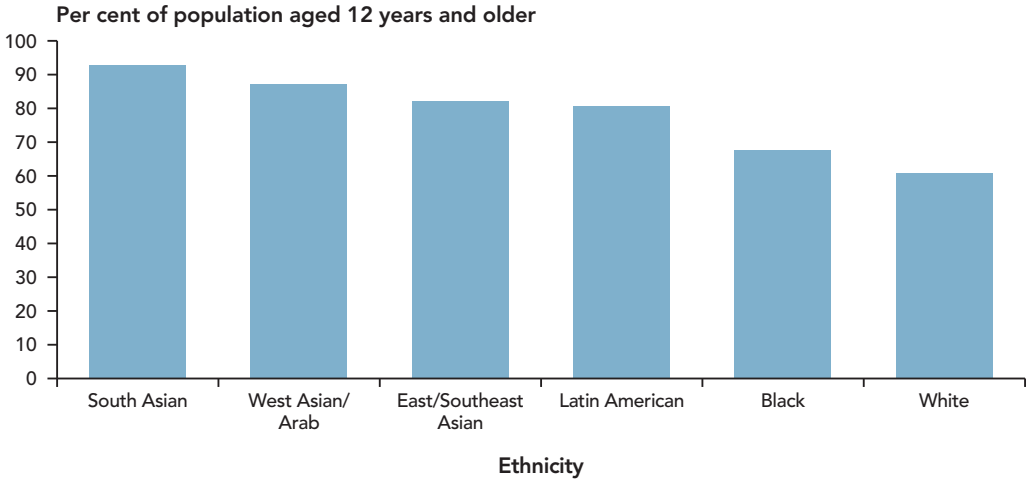
	Prescription Drugs	Ecstasy/MDMA	Salvia divinorum (purple salvia)	Jimson Weed	Blow/Cocaine
Immigrant % (95% CI)	5.4 (4.5 – 6.4)	1.5* (1.0 – 2.1)	1.0* (0.6 – 1.7)	1.5* (1.0 – 2.4)	0.9* (0.5 – 1.7)
Non-immigrant % (95% CI)	5.6 (4.8 – 6.4)	3.4 (2.5 – 4.5)	3.0 (2.2 – 4.0)	2.4 (1.9 – 3.1)	1.3 (1.0 – 1.8)

* Use estimate with caution.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Marijuana use peaks in youth between the ages of 15 and 24 years.[252] In Peel, the per cent of the population never having used marijuana varies by ethnicity (Figure 7.18).

In Peel, cannabis use is very low among immigrant youth.

Figure 7.18
Never Used Marijuana by Ethnicity, Peel, 2009/2010



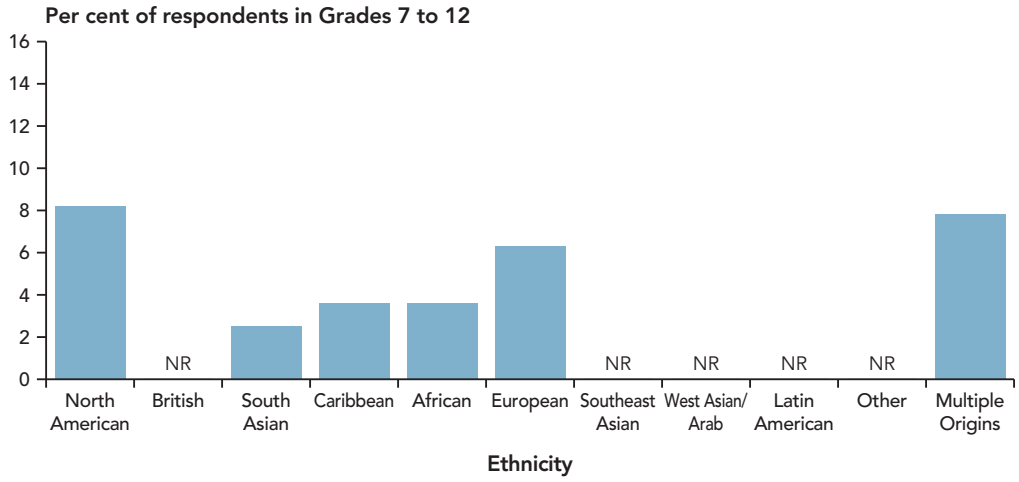
	South Asian	West Asian/ Arab	East/Southeast Asian	Latin American	Black	White
Per cent (95% CI)	92.8 (89.0 – 95.4)	87.1 (70.8 – 95.0)	82.3 (73.8 – 88.4)	80.8 (62.1 – 91.5)	67.6 (56.3 – 77.2)	60.9 (56.8 – 64.9)

Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

In Peel, approximately 18% of students in Grades 7 to 12 have ever tried marijuana. Canadian-born students (21%) are more likely to have tried marijuana compared to foreign-born students (10%).[O]

Overall, 6% of Grades 7 to 12 students use marijuana once per week or more often. Canadian-born students (7%) are more likely than foreign-born students (3%) to use marijuana at least once a week.[O] The frequency of marijuana use also varies by ethnicity (Figure 7.19).

Figure 7.19
Use of Marijuana At Least Once Per Week by Ethnicity, Peel, 2011



	North American	British	South Asian	Caribbean	African	European	Southeast Asian	West Asian/ Arab	Latin American	Other	Multiple Origins
Per cent (95% CI)	8.2* (4.5–14.5)	NR	2.5* (1.4–4.2)	8.5* (6.1-11.9)	3.6* (1.8–7.0)	6.2* (4.4–8.8)	NR	NR	NR	NR	7.7 (6.2–9.6)

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Sexual Health

Some recent immigrants find Canada to be a country of relatively liberal sexual values compared to their countries of origin. Within some ethnocultural communities, discussions of sexuality between parents and children or between men and women is considered taboo.[257]

Cultural factors and attitudes can influence the uptake of family planning. Younger immigrant women, including second-generation immigrants, are more open and flexible than their older counterparts to try new methods of birth control.[258] In Peel, there is no difference in birth control use among sexually active students in Grades 9 to 12 by immigrant status or ethnicity, with the exception of use of the birth control pill/patch.[O] Canadian-born students (29%) who are sexually active are more likely to report using the birth control pill/patch as a method of birth control compared to students born outside of Canada (11%) (Table 7.2). In some ethnocultural communities condom use has connotations of infidelity, promiscuity, extramarital relationships or sexually transmitted infection.[46] In Peel, there is no difference in condom use by immigrant status or ethnicity among sexually active residents aged 15 to 24 years (data not shown).[D1]

Table 7.2
Methods of Birth Control Used† in Grades 7 to 12 Students by Immigrant Status, Peel, 2011

Method of Birth Control Used	Immigrant Per cent (95% CI)	Non-immigrants Per cent (95% CI)	Total Per cent (95% CI)
Male condoms	64.7 (52.0–75.6)	69.5 (63.6–74.9)	68.6 (63.6–73.3)
Birth control pill/patch	11.3* (6.3–19.5)	28.8 (22.8–35.8)	26.0 (20.5–32.3)
None	34.3 (25.4–44.4)	23.5 (18.0–30.0)	25.1 (20.2–30.8)
Withdrawal	21.5* (14.1–31.5)	20.8 (16.7–25.7)	20.9 (16.9–25.5)
Emergency contraception	NR	5.1* (2.9–8.8)	5.1* (3.3–8.0)
Natural family planning (calendar method)	NR	3.0* (1.9–4.8)	2.8* (1.7–4.6)
Female condoms	NR	NR	NR
Spermicidal foam/gel	NR	NR	NR
Hormonal injection	NR	NR	NR
Vaginal ring	NR	NR	NR

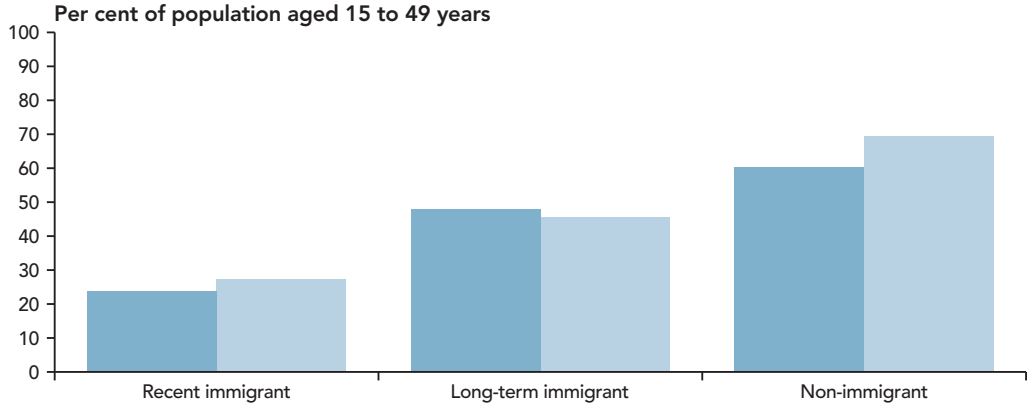
† Based on sexually active respondents (who had sexual intercourse in the past 12 months).
* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects the 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Age When First Had Sex

In 2009/2010, approximately 46% of Peel residents aged 15 to 49 years reported that they first had sex when they were under the age of 20 years.[D1] Recent immigrants (24%) are less likely than long-term (48%) and non-immigrants (60%) to report first having sex before the age of 20 years (Figure 7.20). The age at which residents report first having sex also differs by ethnicity. Peel residents of East/Southeast Asian and South Asian origin are less likely to report first having sex under the age of 20 years (Figure 7.21). Similar differences are observed for Ontario.

Figure 7.20

Sexual Debut Under the Age of Twenty Years by Immigrant Status, Peel and Ontario, 2009/2010

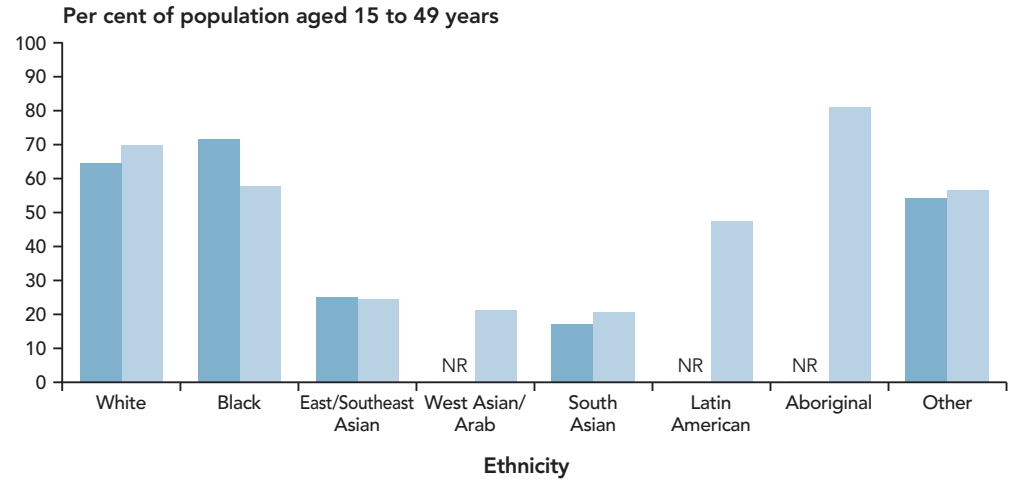


	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	23.8 (17.7 – 31.1)	47.8 (40.0 – 55.7)	60.1 (54.8 – 65.2)
Ontario % (95% CI)	27.3 (54.8 – 65.2)	45.4 (41.7 – 49.1)	69.4 (68.2 – 70.6)

Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Figure 7.21

Sexual Debut Under the Age of Twenty Years by Ethnicity, Peel and Ontario, 2009/2010



	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Peel % (95% CI)	64.6 (58.9 – 70.0)	71.7 (58.9 – 81.8)	25.1* (16.9 – 35.6)	NR	17.1 (12.6 – 22.9)	NR	NR	54.3 (38.1 – 69.7)
Ontario % (95% CI)	69.8 (68.6 – 71.0)	57.8 (50.7 – 64.7)	24.6 (20.7 – 28.9)	21.1* (14.7 – 29.4)	20.7 (16.9 – 25.0)	47.4 (35.7 – 59.5)	80.9 (76.5 – 84.6)	56.7 (49.0 – 64.1)

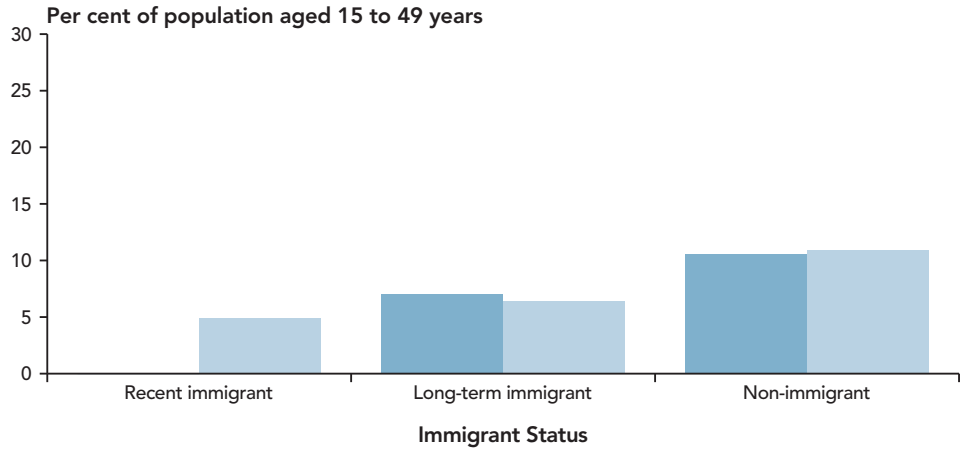
* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Number of Sexual Partners

In Ontario, recent immigrants between the ages of 15 to 49 years are less likely to have had two or more sexual partners in the past 12 months compared to non-immigrants (Figure 7.22).

In Peel, Canadian-born students (14%) are more likely to report having had two or more sexual partners in their lifetime compared to immigrant students (7%).[O] Students of South Asian ethnicity (3%) are least likely to have had more than one sexual partner in their lifetime (Figure 7.23).

Figure 7.22
Having Two or More Sexual Partners in the Past Year by Immigrant Status, Peel and Ontario, 2009/2010

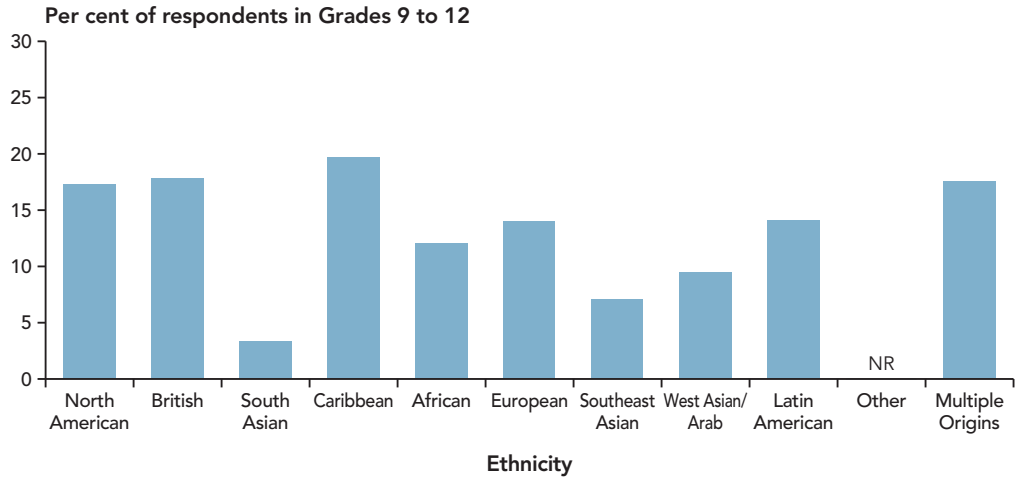


	Recent immigrant	Long-term immigrant	Non-immigrant
Peel Per cent (95% CI)	NR	7.0* (4.5 – 11.2)	10.6 (7.7 – 14.4)
Ontario Per cent (95% CI)	4.9* (3.2 – 7.5)	6.4 (4.9 – 8.4)	10.9 (10.1 – 11.7)

NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Figure 7.23

Students Who Had Two or More Sexual Partners in Lifetime by Ethnicity, Peel, 2011



	North American	British	South Asian	Caribbean	African	European	Southeast Asian	West Asian/ Arab	Latin American	Other	Multiple Origins
Per cent (95% CI)	17.3* (11.7–24.8)	17.7* (11.0–27.2)	3.3* (2.2–4.8)	19.6 (15.7–24.2)	12.0* (5.7–23.4)	14.0 (10.6–18.4)	7.1* (3.7–13.3)	9.5* (5.0–17.1)	14.1* (8.4–22.6)	NR	17.5 (14.7–20.7)

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Student Health Survey 2011, Peel Public Health.

Sexual Education – Youth

Peel school boards include sexual health education in their curriculum and Peel Public Health provides educational resources for teachers to use in the classroom. The resources help teachers provide accurate and age-appropriate information to their students while guiding discussions around puberty, maturation, relationships, families, parenthood and decision-making skills.

The extent to which parents/guardians of youth aged 12 to 17 years talk to their children about sexual health varies between those born in Canada and those born outside of Canada. In Peel, in 2009, the majority of parent/guardians talked about or gave information to their children about an appropriate age to become sexually active. Foreign-born parents are less likely than Canadian-born parents to talk about or give information to their children about an appropriate age for sexual debut, contraception use and the use of condoms to prevent sexually transmitted infections (data not shown).[P2] Foreign-born parents (62%) are also less likely than Canadian-born parents (86%) to be comfortable talking to their children about sexual health.[P2] A similar proportion of foreign-born (86%) and Canadian-born parents (93%) feel they have the information that they need to talk with youth about sex.[P2]

chapter 8

HEALTH-CARE ACCESS AND USE

Key Messages

- Long-term immigrants are more likely to have a regular medical doctor.
- Many Peel residents communicate with their doctor in a non-official language.
- Immigrants are more vulnerable than other Canadians in navigating health issues and services due to lower health literacy levels.[213]
- Dental caries (i.e., tooth decay or cavities) are more common among immigrant children in Peel.
- Recent immigrants report fewer dental visits and are less likely than long-term immigrants and non-immigrants to have dental insurance.
- In Peel, recent immigrants are less likely than long-term and non-immigrants to have insurance that covers the cost of eye glasses or contact lenses.

This chapter of the report describes health-care access and use, as well as health literacy as they relate to immigrant status and ethnicity. The use of services outside of general health care, such as the use of Community Care Access Centres and other community-based services, are not addressed in this report.

The Canadian health-care system covers a range of services, such as preventative services, primary care, specialists, and acute and long-term care. The findings from Canadian population studies comparing health-care use rates of immigrants with non-immigrant populations are mixed.

The use of health services by immigrants in Canada is complex. These relationships need to be explored further.

Use of Primary Physician, Hospital and Emergency Department Services

In Canada, recent immigrants utilize health services significantly less than long-term immigrants and Canadian-born residents.[213]

However, important differences were noted across immigrant sub-groups. Refugees used physician and hospital services more when compared to other immigrant sub-groups.[213] The frequency and type of health service used also varied by a person's region of birth and length of time in Canada. For example, immigrants who arrived after 1985 used mental health services significantly less (especially women) relative to those born in Canada or arriving before 1985.[213]

The impact of recent changes to the health-care coverage for refugees remains to be seen.

Health-care use is influenced by many factors, including access, beliefs and health literacy.

Twenty-one per cent of recent immigrants residing in the Toronto CMA reported having problems or difficulties accessing or using the health services in Canada (two years after arrival).[C2] Access varied by immigrant category, age group and ethnicity.

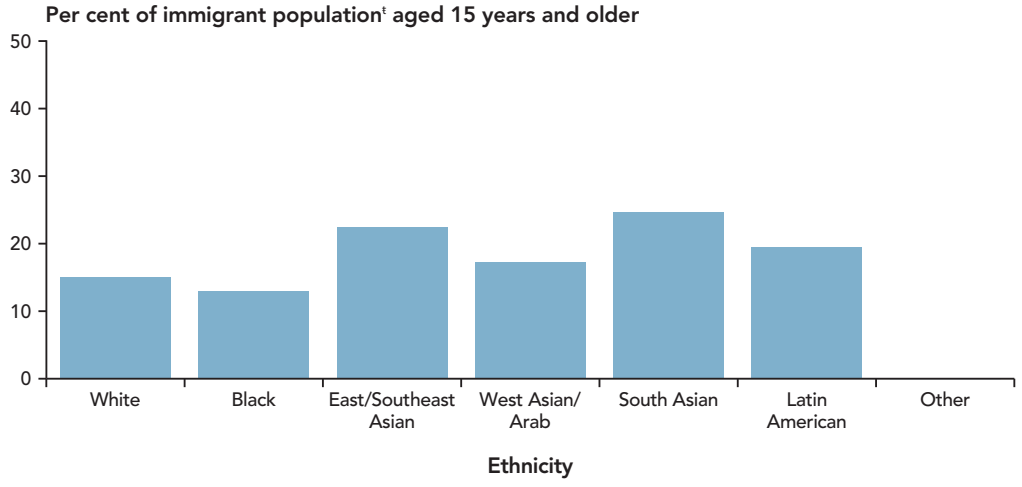
Specifically:

- Economic class immigrants reported more problems or difficulties in accessing or using health services (24%) compared to immigrants in the family class (16%).[C2]
- Immigrants aged 25 to 44 years and 45 to 64 years were more likely than immigrants aged 15 to 24 years to report problems in getting access to or using health services.[C2]
- Immigrants of South Asian and East/Southeast Asian origin were more likely than immigrants of White ethnicity to report problems in accessing or using health services (Figure 8.1).

In Peel and Ontario, long-term immigrants are more likely to report having a regular medical doctor than recent immigrants and non-immigrants (Figure 8.2).

Figure 8.1

Problems or Difficulties Getting Access to or Using Health Services in Canada by Ethnicity, Toronto CMA[ŧ], Wave 3

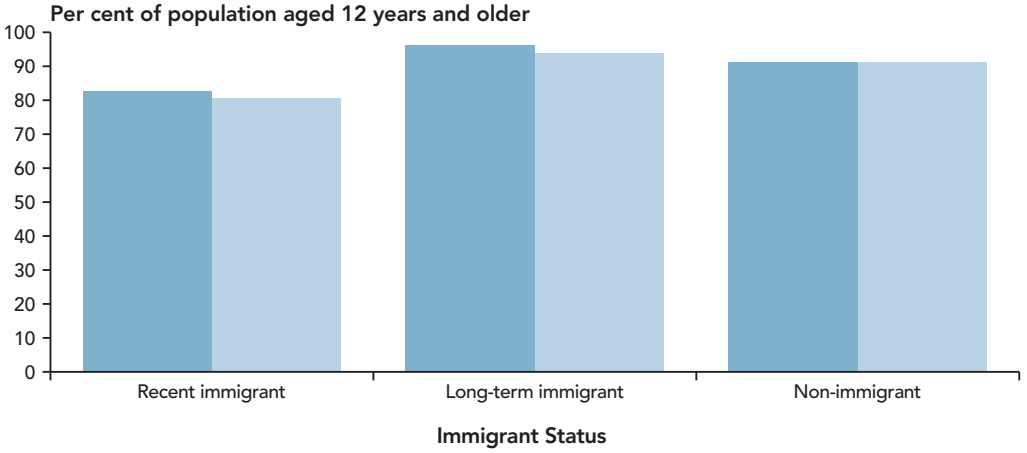


	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Other
Per cent (95% CI)	15.1 (12.1 – 18.9)	12.9 (7.4 – 21.8)	22.5 (19.8 – 25.5)	17.2 (12.6 – 22.9)	24.6 (22.0 – 27.4)	19.4 (10.6 – 32.7)	NR

ŧ CMA - Census Metropolitan Area.
NR = Not releasable due to small numbers.
Notes: Based on immigrants who arrived in Canada between October 1, 2000 and September 30, 2001.
95% CI reflects 95% confidence interval of the estimate.
Source: Longitudinal Survey of Immigrants to Canada, 2005, Statistics Canada.

Figure 8.2

Population with Regular Medical Doctor by Immigrant Status, Peel and Ontario, 2009/2010



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	82.5 (75.9 – 87.6)	96.1 (93.7 – 97.7)	91.1 (88.3 – 93.3)
Ontario % (95% CI)	80.5 (77.5 – 83.1)	93.8 (92.7 – 94.8)	91.3 (90.7 – 91.8)

Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Hospitalization

Using the "ethnic concentration" component of the Ontario Marginalization Index, Table 8.1 shows the hospitalization rate by ethnic concentration quintiles. Peel residents are hospitalized at a rate of 6,785 per 100,000 population per year. In Peel, areas within Peel with the highest ethnic concentrations (quintiles 4 and 5) have hospitalization rates similar to that for Peel. In contrast, areas with the lowest ethnic concentrations (e.g., less visible minorities and less recent immigrants) have significantly lower hospitalization rates than Peel overall.

Definition

Ethnic concentration **is one dimension of the Ontario Marginalization Index, which seeks to understand inequalities in various measures of health and social well-being, either between population groups or between geographical areas. Ethnic concentration is based on the per cent of recent immigrants and visible minorities living in a residential area.**

Emergency Department Use

In Peel, residents visit the emergency departments at a rate of 25,519 per 100,000 population. Using the ethnic concentration component of the Ontario Marginalization Index, Table 8.2 shows the rates of emergency department visits by ethnic concentration quintiles. Residents who live in areas of highest ethnic concentration visit emergency departments less often than Peel residents overall.

Table 8.1

Age-Standardized Hospitalization Rate for All-Causes by Ethnic Concentration†, Peel, 2006

Dimension: Ethnic Concentration	Hospitalization Rate (per 100,000)	Comparison to Peel's Hospitalization Rate*
1 (lowest ethnic concentration)	5,999	Lower than Peel
2	6,422	Lower than Peel
3	6,358	Lower than Peel
4	6,753	No Difference
5 (highest ethnic concentration)	6,747	No Difference

† Ethnic concentration is one dimension of The Ontario Marginalization Index (ON-Marg) which seeks to understand inequalities in various measures of health and social well-being, either between population groups or between geographical areas. Ethnic concentration is based on the per cent of recent immigrants and visible minorities living in a residential area.
Note: Overall Hospitalization Rate in Peel: 6,785 Confidence Interval (CI):6,735-6,836.
* Statistical significance based on non-overlapping 95% confidence intervals.
Sources: Ontario Marginalization Index, Centre for Research on Inner City Health and 2006 Census, Statistics Canada;
Hospital In-Patient Discharge Data, 2006, Provincial Health Planning Database (PHPDB), Ontario Ministry of Health and Long-Term Care.

Table 8.2
Age-Standardized Emergency Department (ED) Visit Rate for All-Causes by Ethnic Concentration‡, Peel, 2006

Dimension: Ethnic Concentration	ED Visit Rate (per 100,000)	Comparison to Peel's ED Visit Rate*
1 (lowest ethnic concentration)	28,564	Higher than Peel
2	28,281	Higher than Peel
3	26,858	Higher than Peel
4	27,132	Higher than Peel
5 (highest ethnic concentration)	24,447	Lower than Peel

‡ Ethnic concentration is one dimension of The Canadian Marginalization Index (CAN-Marg) which seeks to understand inequalities in various measures of health and social well-being, either between population groups or between geographical areas. Ethnic concentration is based on the per cent of recent immigrants and visible minorities living in a residential area.
Note: Overall ED Visit Rate in Peel: 25,519 Confidence Interval (CI): 25,424-25,614.
* Statistical significance based on non-overlapping 95% confidence intervals.
Sources: Ontario Marginalization Index, Centre for Research on Inner City Health and 2006 Census, Statistics Canada; National Ambulatory Care Reporting System 2006, Provincial Health Planning Database (PHPDB),Ontario Ministry of Health and Long-Term Care.

Oral and Dental Health

Good oral health is important for general health and quality of life. Oral infections can affect a person's psychological and social well-being, and have also been linked to systemic diseases. For example, periodontal disease (gum infections) has been associated with diabetes, premature birth, heart disease and stroke. An individual's oral health is influenced by the availability of dental insurance and the use of dental services. Dental caries or dental decay can be prevented, by focusing on the development of good oral health habits in children.

The development of dental caries is on the rise in low-income countries, such as some countries within Africa and Asia. This increase can be explained by the consumption of refined sugar, inaccessibility to preventive dental programs and lack of topical fluorides (commonly available in toothpaste, local drinking water and professionally applied fluoride products in higher-income countries).[260]

Definition

Calculus, **also referred to as tartar, is a hard deposit on the tooth that may lie above and/or below the gum margin. This results from the hardening of plaque. Calculus deposits do not cause disease, but offer surface area for growth of plaque, which can interfere with daily tooth cleaning activities. Calculus can be removed by professional scaling only.**

Fluorosis **is caused by excessive exposure to fluorides during early childhood. Fluorosis results in tooth discolouration, which may range from patchy white staining of the tooth enamel in its mildest form, to pitted brown staining in its most severe form.**

Dental and restored caries: **Dental caries are also referred to tooth decay or cavities; restored caries are those cavities that have been filled.**

Dental caries are more common among immigrant children compared to their Canadian-born counterparts.[261] Within Peel, Canadian-born children have fewer dental caries, urgent conditions, gingivitis (regardless of severity) and calculus (i.e., tartar); however, they have a higher rate of fluorosis and more restored caries than children born outside of Canada (Table 8.3).

In 2011, among Peel students in Grades 10 and 12, there was no difference between the prevalence of gingivitis, dental trauma or use of urgent dental care by immigrant status (data not shown).[O]

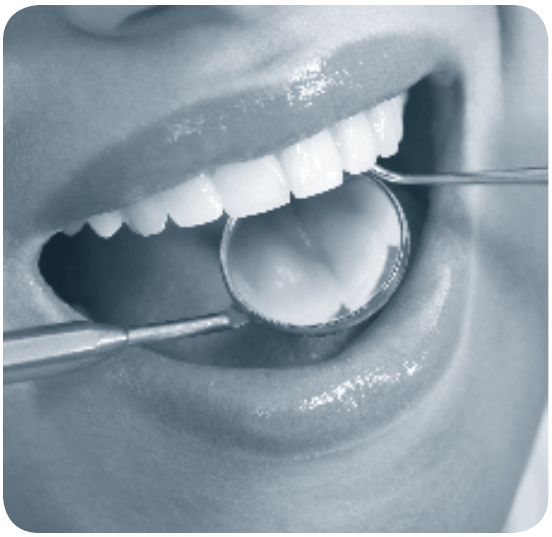


Table 8.3
Dental Health Indicators in Children* by Place of Birth, Peel, 2001/2002

Health Indicator	Canadian-born	Foreign-born	Birth Place Not Known
Mean caries experience	1.1	1.4	1.3
% with dental caries	35	44	31
% with fluorosis	17	10	5
% with urgent conditions	9	17	17
% with all caries restored†	59	49	41
% with all caries active† (untreated)	23	32	37
% with gingivitis	14	21	9
% with calculus	5	13	4

* Includes a sample of children in Grades 2, 4, 6 and 8.
† Applies only to children who have experienced caries.
Source: Dental Indices Survey, Peel Public Health, 2001/2002.

Dental Insurance and Immigrant Status

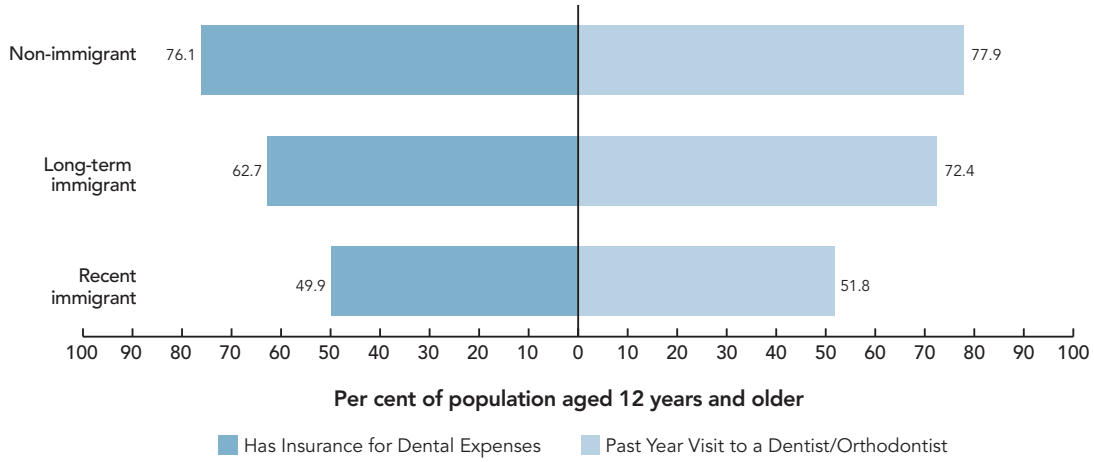
Recent and long-term immigrants are less likely to use oral health services.[46] Barriers to accessing these services include: not having money to pay for the services, not speaking English, being unfamiliar with the health-care system, and being afraid or embarrassed (e.g., fear, history of inadequate care, embarrassment of oral condition).[46, 261] In Peel, only 50% of recent immigrants have dental insurance (Figure 8.3).

Utilization of Dental Health Services

On average in Peel, recent immigrants have had fewer visits to a dentist in the past year compared to non-immigrants (Figure 8.3). Immigrants are more likely to use dental services for care of teeth, gums or dentures, whereas Canadian-born individuals are more likely to use dental health services for preventive care.[262]

An increase in dental-health service use among immigrants over time has been associated with higher levels of education,

Figure 8.3
Insurance for Dental Expenses and Past Year Visits to a Dentist/Orthodontist by Immigrant Status, Peel, 2009/2010



Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

greater income adequacy (middle, upper-middle or high income) and having dental insurance.[262] Canadians with dental insurance were 2.7 times more likely than the non-insured to report a dental visit in the previous year.[263] Oral health can improve in older adults given increased access to dental services.[264]

Peel Program

Healthy Smiles is a provincial program that aims to improve the oral health of children and youth by providing access to preventive dental care for children from low income families, and therefore reducing the need for urgent dental treatment. Children are eligible for this program if they are under the age of 17 and meet specific criteria.

Children in Need of Treatment (CINOT), a provincial health program, provides payment for basic dental treatment for children under the age of 18 years who are in need of urgent dental care. Similar to the Healthy Smiles program, children must meet specific eligibility criteria.

Oral Health among Children and Youth

Dental needs were the most common need identified by Peel parents of senior kindergarten children (12.2%).[Q] Immigrant mothers expressed a higher concern for the dental needs of their child, compared to Canadian-born mothers.[Q]

In adolescence, immigrant youth are five times more likely than youth born in Canada to have dental caries.[261] They also have poor oral hygiene, more gingivitis involving bleeding, dental decay, more dental caries and more likely to need all forms of dental treatment.[179, 261]

In Peel, Canadian-born students in Grades 7 to 12 are more likely (58%) than immigrant students (39%) to visit the dentist more than once per year.[O]

The good news is that the oral health of immigrant adolescents improves with the length of time in Canada. Changes in public health dental programs have also resulted in improved access for children and improved follow up procedures.[261] Even with this improvement in dental health care, immigrants are still at an overall disadvantage with respect to oral health; a problem that persists into adulthood.

Vision Care/Vision Health

The loss of vision can limit one's ability to work, drive and complete other activities of daily living. Undiagnosed eye disease that threatens eyesight and loss of vision, is thought to be more common among new immigrants and refugees than in the general population.[46] There is little information available about the causes and prevalence of visual impairment or uncorrected refractive error in Canada.[265, 266] Therefore, this section of the report will describe visits to eye specialists and insurance coverage for the cost of eye glasses or contact lenses.

Did You Know

The Canadian Collaboration for Immigrant and Refugee Health recommends that new immigrants in Canada:

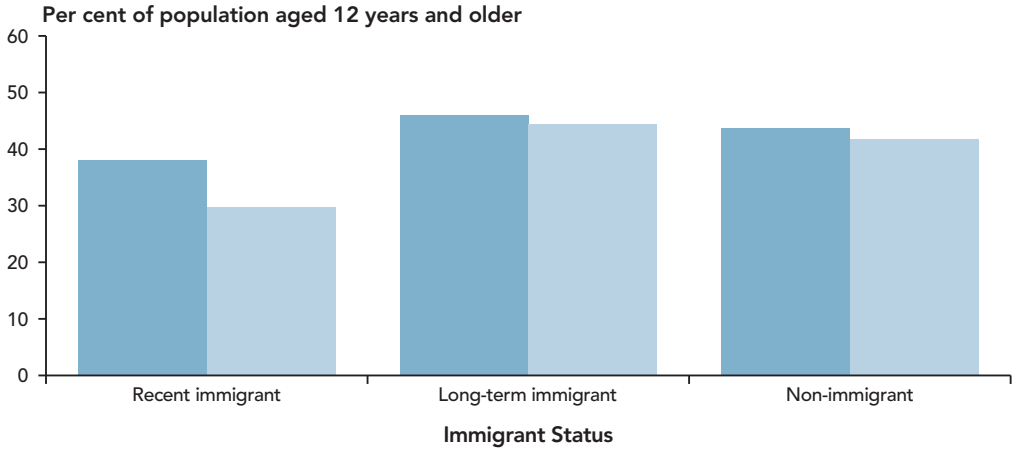
- **receive age-appropriate screening for visual impairment, and**
- **be referred to an optometrist or ophthalmologist if their vision (with distance glasses or contact lenses in place if worn habitually) is worse than 6/12 (i.e., worse than 20/40).**

Referral for assessment to an ophthalmologist is also warranted where other risk factors for blinding eye disease are present (i.e., diabetes, age older than 65 years or for those of Black ethnicity older than 40 years and glaucoma in a first-degree relative and myopia exceeding -6 diopters).[46]

In Ontario, recent immigrants are less likely than long-term immigrants and non-immigrants to have consulted with an eye specialist, such as an ophthalmologist, or optometrist in the past year (Figure 8.4). Past year contact with an eye specialist also varies by ethnicity (Figure 8.5).

Figure 8.4

Past Year Consultation with an Eye Specialist† by Immigrant Status Peel and Ontario, 2009/2010

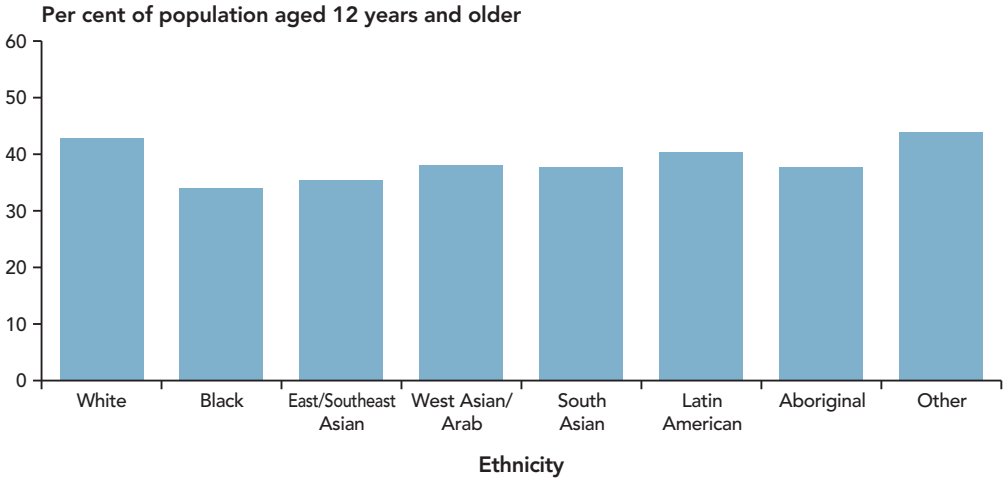


	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	38.0 (30.9 – 45.7)	46.1 (40.7 – 51.6)	43.8 (39.5 – 48.2)
Ontario % (95% CI)	29.7 (26.5 – 33.1)	44.4 (42.2 – 46.6)	41.8 (40.9 – 42.8)

Note: 95% CI reflects 95% confidence interval of the estimate.
† Seen or talked to an eye specialist, such as an ophthalmologist or optometrist (includes both telephone and face-to-face contacts).
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Figure 8.5

Past Year Consultation with an Eye Specialist† by Ethnicity, Ontario, 2009/2010



	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Per cent (95% CI)	42.8 (41.9 – 43.7)	34.1 (29.2 – 39.5)	35.5 (31.9 – 39.3)	38.1 (30.1 – 46.9)	37.8 (33.8 – 42.1)	40.3 (29.9 – 51.5)	37.8 (33.7 – 42.1)	43.9 (36.8 – 51.2)

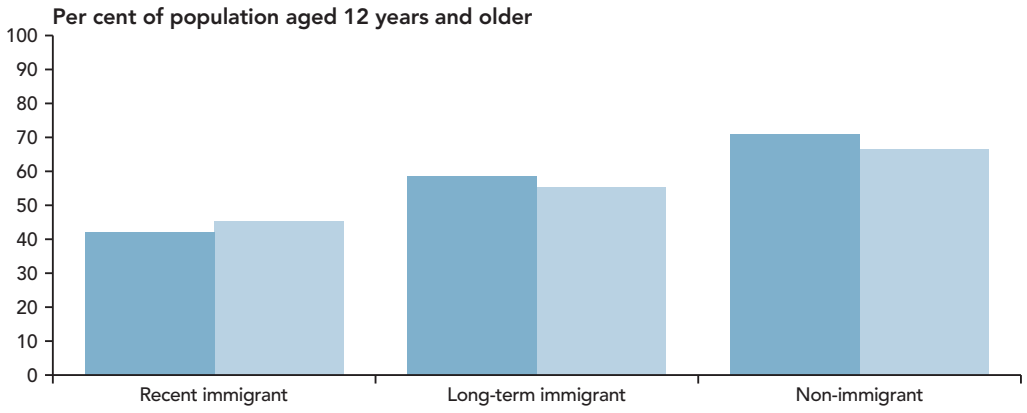
Note: 95% CI reflects 95% confidence interval of the estimate.
† Seen or talked to an eye specialist, such as an ophthalmologist or optometrist (includes both telephone and face-to-face contacts).
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Insurance Coverage

The inability to pay for eye glasses or contact lenses can be a barrier to vision health. In Peel, approximately 61% of residents had insurance (private, government or employer-paid plans) that covered all or part of the cost of eye glasses or contact lenses.[D3] Recent immigrants (42%) are less likely than long-term immigrants (59%) and non-immigrants (71%) to have insurance coverage (Figure 8.6). In Peel and Ontario, insurance coverage for eye glasses and contact lenses also varies by ethnicity (Figure 8.7).

Figure 8.6

Insurance for Eye Glasses or Contact Lenses by Immigrant Status, Peel and Ontario, 2005

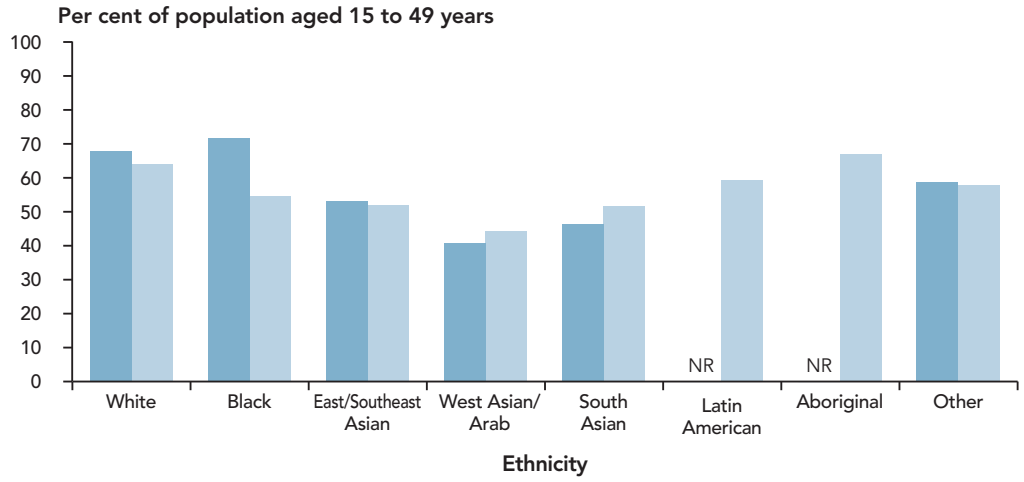


	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	41.9 (34.9 – 49.3)	58.5 (53.5 – 63.3)	70.8 (67.3 – 74.1)
Ontario % (95% CI)	45.2 (41.8 – 48.6)	55.3 (53.4 – 57.1)	66.3 (65.5 – 67.0)

Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Figure 8.7

Insurance for Eye Glasses or Contact Lenses by Ethnicity, Peel and Ontario, 2005



	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Peel % (95% CI)	68.0 (64.6 – 71.3)	61.2 (49.2 – 71.9)	53.2 (43.4 – 62.8)	40.9* (24.1 – 60.1)	46.5 (39.6 – 53.4)	NR	NR	58.8 (45.3 – 71.1)
Ontario % (95% CI)	64.2 (63.4 – 65.0)	54.6 (48.8 – 60.2)	52.0 (48.3 – 55.8)	44.4 (35.9 – 53.2)	51.8 (47.2 – 56.4)	59.2 (50.8 – 67.1)	66.9 (62.1 – 71.5)	58.0 (53.1 – 62.7)

NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Use of Preventive and Mental Health Services

Immigrants and ethnocultural minority groups often underuse preventive,[267] specialist[268] and mental health services.[269, 270]

Barriers to access for immigrant/ethnocultural groups include:

- systemic (e.g., doctors unable to speak the same language, long waiting lists);[271]
- psycho-social (e.g., mistrust, health beliefs);[272, 273]
- economic (e.g., problems with health insurance);[273] and/or
- informational (e.g., problems navigating the health-care system).[271, 273]

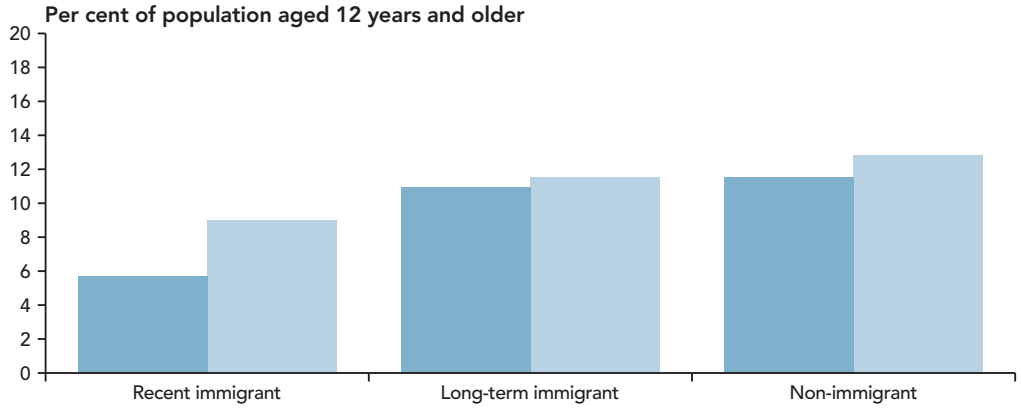
Utilization of Alternative and Complementary Medicine

The practice of complementary and alternative medicine (CAM) consists of many practitioners representing both the professional sectors, as well as alternative medicines. Alternative health-care providers include massage therapists, acupuncturists, homeopaths or naturopaths, herbalists, reflexologists, spiritual healers and religious healers.[15]

In Ontario, some CAM practices, such as massage therapy and chiropractic medicine, are regulated by the Regulated Health Professionals Act, 1991. Regulations ensure the public has access to qualified, competent and ethical practitioners. Homeopathy and traditional Chinese medicine are in the process of becoming regulated health professions in Ontario.[274, 275] However, many CAM practices remain unregulated in Canada.[276]

Figure 8.8

Past Year Consultation with Alternative Health-Care† Provider by Immigrant Status, Peel and Ontario, 2005



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	5.7* (3.5 – 9.3)	10.9 (8.3 – 14.3)	11.5 (9.4 – 14.1)
Ontario % (95% CI)	9.0 (7.2 – 11.2)	11.5 (10.4 – 12.8)	12.8 (12.2 – 13.3)

* Use estimate with caution.
† Seen or talked to an alternative health-care provider such as an acupuncturist, homeopath or massage therapist about physical emotional or mental health.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

It is unknown how prevalent the use of traditional remedies is within Peel; however, approximately 10% of Peel residents reported having contact with alternative health-care providers in the past 12 months.[D3] Recent immigrants are less likely than non-immigrants to report consulting with an alternative health-care provider in the past year (Figure 8.8). Past year consultations with an alternative health-care provider differ by ethnicity (Figure 8.9).

Figure 8.9
Past Year Consultation with Alternative Health-Care Provider† by Ethnicity, Ontario, 2005

	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Per cent (95% CI)	12.7 (12.2 – 13.3)	7.1* (4.8 – 10.5)	14.2 (11.9 – 16.9)	NR	6.6 (4.7 – 9.0)	10.9* (6.8 – 16.9)	9.7 (7.4 – 12.5)	12.0 (9.1 – 15.6)

† Seen or talked to an alternative health-care provider such as an acupuncturist, homeopath or massage therapist about physical emotional or mental health.
* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Did You Know

Some traditional (folk) medicines used by different cultures have been found to contain metals and/or other substances that may be toxic and harmful to health. For example, lead may accidentally get into folk medicine during methods of preparation (e.g., grinding or colouring), or may be added intentionally because it is thought to be useful in the treatment of some ailments.[277]

People who sell a remedy may not know whether it contains a harmful substance and one cannot tell by looking at it or tasting it.

Examples of folk medicines known to contain lead include:

- Ba-baw-san – a Chinese herbal remedy used to treat colic pain or to pacify young children, and
- Ghasard – a brown-powered Indian folk remedy that is used as a tonic.[277]

Examples of folk medicines with other toxic effects:

- Lantana camera (red sage known as one type of 'bush tea') – a popular remedy to treat colds and fever across the Caribbean region which can cause liver damage,[278] and
- Argemone Mexicana (Mexican poppy, sissle) – a tea made from leaves used for cold, coughs, fever, diabetes and hypertension can produce vomiting, diarrhoea and cardiac ailments.[278]

Taking any supplements, particularly those that are unregulated, should be discussed with a health-care provider, especially if one is taking prescription medications because there could be potentially harmful interactions.

If you use supplements that are unregulated elsewhere, you may not know what you are getting.

Health Literacy

Definition

Health literacy is described as the ability to access, understand, evaluate and communicate information to improve health throughout life.[279]

Health literacy is a new concept and is still being defined by practitioners and policy makers.

Literacy and numeracy skills are essential for full participation in society. Generally, people who have lower literacy levels are 1.5 to 3 times more likely to have an adverse health outcome as compared to people with higher reading levels.[280]

Measurement

Measuring Health Literacy

In Canada, health literacy is measured using the International Adult Literacy and Skills Survey (IALSS). Researchers have used the health-related test items to create a new scale for measuring health literacy. The test items are coded into one of five health related activities: health promotion, health protection, disease prevention, health-care and maintenance, and systems navigation. The scale which is scored from 0 to 500 allows for comparison of differences in average health literacy among adults. Proficiency has been grouped into five levels.[281]

Proficiency	*Score*	*Interpretation*
Level 1	0-225	Very poor literacy levels
Level 2	226-275	Capacity to deal with simple tasks
Level 3	276-325	Adequate to cope with demands
Level 4	326-375	Strong skills
Level 5	376-500	Strong skills/Highest level of proficiency

Information about health literacy is drawn from international and Canadian population data. There are no Peel health literacy data at this time.

In 2007, an estimated 55% of Canadians aged 16 to 65 years scored below Level 3 on the IALSS health literacy scale. Level 3 is defined as the literacy level required to obtain, understand and act upon health information and services and to make appropriate health decisions.[281]

Canadians with the lowest health-literacy scores are more than 2.5 times as likely to report fair or poor health when compared to Canadians whose health literacy scores are at levels 4 or 5. These associations hold even after controlling for age, sex, education, first language, immigration and Aboriginal status.[282]

There are strong associations between health literacy and some self-reported health outcomes, particularly diabetes. For example, as health literacy scores increase, the prevalence of diabetes decreases. A similar pattern exists between health literacy and high blood pressure, although the association is not as strong.[282]

Recently, attention has focused on health literacy as a determinant of health. Health literacy includes a critical understanding of health issues, knowledge of how to use the health-care system, one's ability to advocate for health care, and access to and control of information and other resources that help to promote and maintain physical and mental health in everyday life.[283]

In Canada, poor language proficiency is associated with poor self-reported health among recent immigrants at six months and two years after arrival. Women and refugees are particularly vulnerable.[5]

The three most vulnerable groups identified in the Canadian Health Literacy Survey for navigating health issues are seniors, immigrants (particularly those who spoke neither English nor French) and people who are unemployed.[282] These groups scored lower than the national average on health literacy. When examining factors that predict health literacy, being foreign-born had a strong negative effect on health literacy.[282]

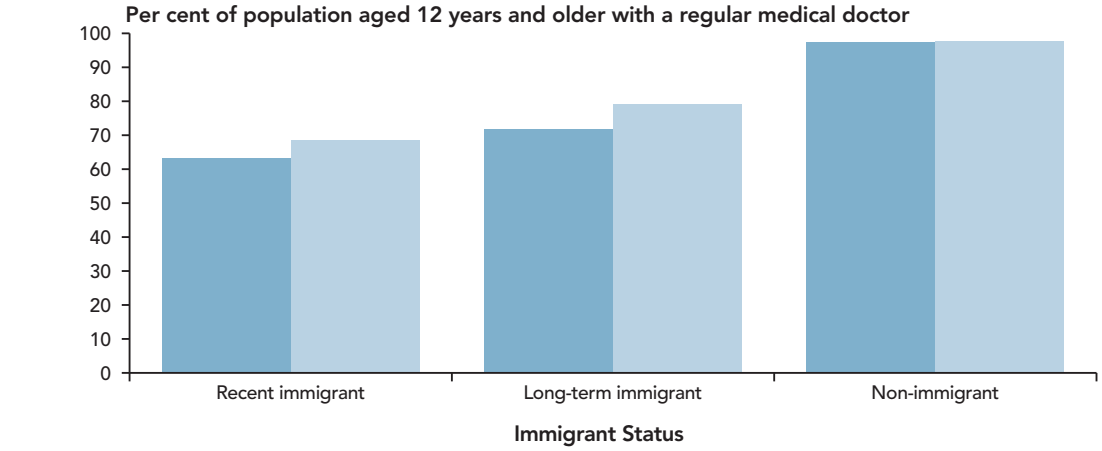
Low health literacy is associated with difficulties in accessing necessary preventive and acute services for many subgroups of the Canadian population including new immigrants, people with limited English or French fluency, or low income. There are early indicators that barriers to health literacy may contribute to the deterioration in the health status of immigrants over time.[284]

For immigrants, literacy skills in English and/or French are a key component of socioeconomic integration.[285] According to the IALSS, immigrants aged 16 to 65 years perform significantly below the average for the Canadian-born population in all four domains of literacy (prose, document, numeracy and problem-solving). More research is needed to determine the relationship between mother tongue, and literacy performance in English or French.[286]

Languages Spoken to Medical Doctor

The ability to communicate effectively with a health-care provider is an important aspect of access to health care. Effective communication is associated with increased patient compliance and reduced adverse reactions and complications. Figure 8.10 shows that recent immigrants and long-term immigrants residing in Peel are less likely than non-immigrants to speak to their doctor in English.

Figure 8.10
English Spoken to Doctor by Immigrant Status, Peel and Ontario, 2009/2010



	Recent immigrant	Long-term immigrant	Non-immigrant
Peel % (95% CI)	63.1 (54.8 – 70.6)	71.6 (65.3 – 77.2)	97.3 (97.3 – 97.9)
Ontario % (95% CI)	68.4 (64.5 – 72.0)	79.0 (76.9 – 81.1)	97.6 (97.3 – 97.9)

Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

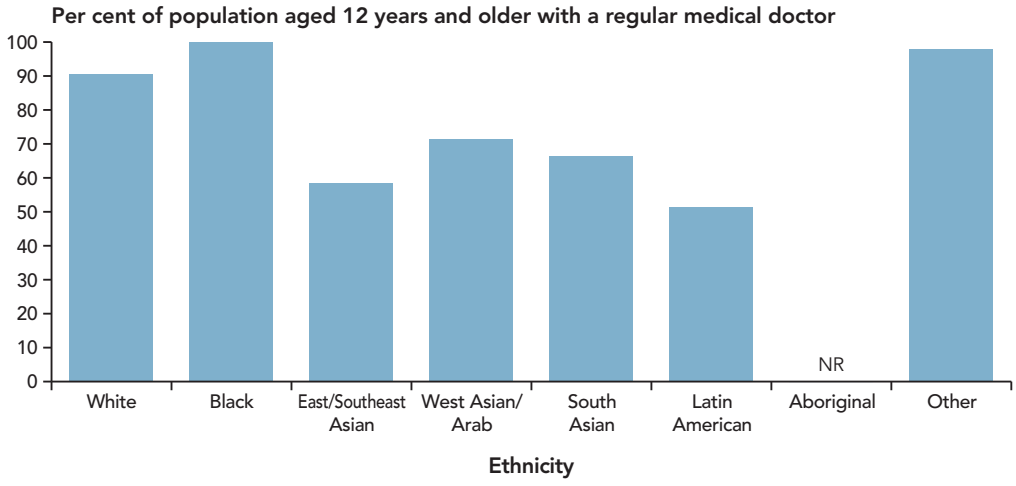
Figure 8.11 shows that Peel residents who report their ethnicity as Latin American, East/Southeast Asian, South Asian or West Asian/Arab are less likely to speak to their doctor in English when compared to other ethnicities.

Of the Peel residents who have a regular medical doctor, approximately 19% (or 193,200) of them speak to their doctor in languages other than English or French.[D1]

The most commonly reported other languages spoken to regular medical doctors are Punjabi (45,600) and Polish (20,500).[D1]

According to the Peel Public Health Physician Information System, the most popular languages spoken by physicians in Peel after English or French include Hindi, Punjabi, Urdu, Mandarin and Cantonese.[R]

Figure 8.11
English Spoken to Doctor by Ethnicity, Peel, 2009/2010



	White	Black	East/Southeast Asian	West Asian/ Arab	South Asian	Latin American	Aboriginal	Other
Per cent (95% CI)	90.5 (86.7 – 93.3)	100.0 (100.0 – 100.0)	58.4 (48.7 – 67.6)	71.3 (48.7 – 86.7)	66.5 (59.1 – 73.2)	51.3* (23.1 – 78.8)	NR	97.8 (91.5 – 99.5)

* Use estimate with caution.
NR = Not releasable due to small numbers.
Note: 95% CI reflects 95% confidence interval of the estimate.
Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Data Gaps

- More research is needed to determine the extent to which low literacy scores of recent immigrants reflect a lack of proficiency in English or French (i.e., the language in which tests were administered), rather than low literacy in their mother tongue.
- Health literacy data are needed at the local level.

chapter 9

FUTURE OUTLOOK

Peel's population is made up of a large group of immigrants and their children, many of whom are, in fact, Canadian-born. The continuous arrival of new immigrants exerts a positive effect on the economy and society. Social support is particularly important for new immigrants as they settle into their new community, therefore opportunities for integration are essential.

Recent immigrants have many positive characteristics and health behaviours, some of which are likely to dissipate over time. How do we prevent immigrants from adopting many of the bad habits or risky health behaviours exhibited by the Canadian-born population? This question can best be addressed using an evidence-informed approach and will be further explored through the work associated with Peel Public Health's "Serving an Ethnoculturally Diverse Community" infrastructure priority. More work with health-care providers and communities within Peel is also needed in order to address this.

Diabetes and cardiovascular disease are examples of chronic diseases that are of significant public health concern among Peel's population overall regardless of immigrant status or ethnicity. However, they are of particular concern among the South Asian community which will, similarly, need to be addressed.

Throughout this report it is evident that the non-immigrant population is worse-off for a number of risky health behaviours (e.g., smoking prevalence) and health outcomes (e.g., mortality rates). Often differences in health behaviours are also observed by ethnicity.

The promotion of healthy behaviours and supportive environments can help reduce the risk of disease and illness. The inequitable health outcomes, and health risks and assets described in this report will be considered as we work with our residents so as to have a positive impact at the population level. Many of the analyses presented in this report are exploratory and there are numerous research questions that can be generated from this information.

Continued vigilance is required by Peel Public Health for the prevention and control of communicable diseases, particularly those that are endemic in the countries from which Peel's residents have emigrated (e.g., tuberculosis).

Data from external data sources and those collected by Peel Public Health are limited in terms of the quantity and quality of ethnocultural information they capture.

Many of the external data sources do not capture immigrant status or ethnicity, and if they do, it is captured inconsistently. The previously mandatory long-form Census was considered the most accurate reflection of Canada's diverse population. The reintroduction of this form would ensure better quality data and continued opportunities to analyze relevant trends over time. While some surveys, such as the Canadian Community Health Survey (CCHS), collect ethnocultural information, the sample size at the local level is often too small to conduct meaningful analyses without combining several years of data together. Increased sample sizes would allow for more meaningful subgroup analyses. For example, those who self-report as South Asian in Peel's surveys make up a larger proportion of the sample compared to other ethnic groups. Even for this group, the data are imperfect; however, the data are even more problematic for other groups, such as those who self-identify as Latin American, and are not as well represented in our data sets. As a result, the sample size for such groups are often not large enough to demonstrate an association or differences if they exist. The addition of ethnocultural information to the collection of data such as vital statistics and cancer incidence would also be beneficial.

In recent years, Peel Public Health has begun to improve its collection of ethnocultural information used for population health assessment by incorporating questions addressing immigrant status and ethnicity into a number of our general population surveys. The need to continue to incorporate such questions in a systematic way is important for population health assessment and the identification of priority populations. Improvements to the collection of ethnocultural information in the Integrated Public Health Information System (iPHIS) is also needed.

The ability to analyze trends over time for relevant subgroups should also be explored. For example, population estimates by immigrant status, sex and five-year age group at the local level would enable us to analyze trends over time for selected health indicators.

Moving forward, opportunities will be explored to address these significant gaps in the data.

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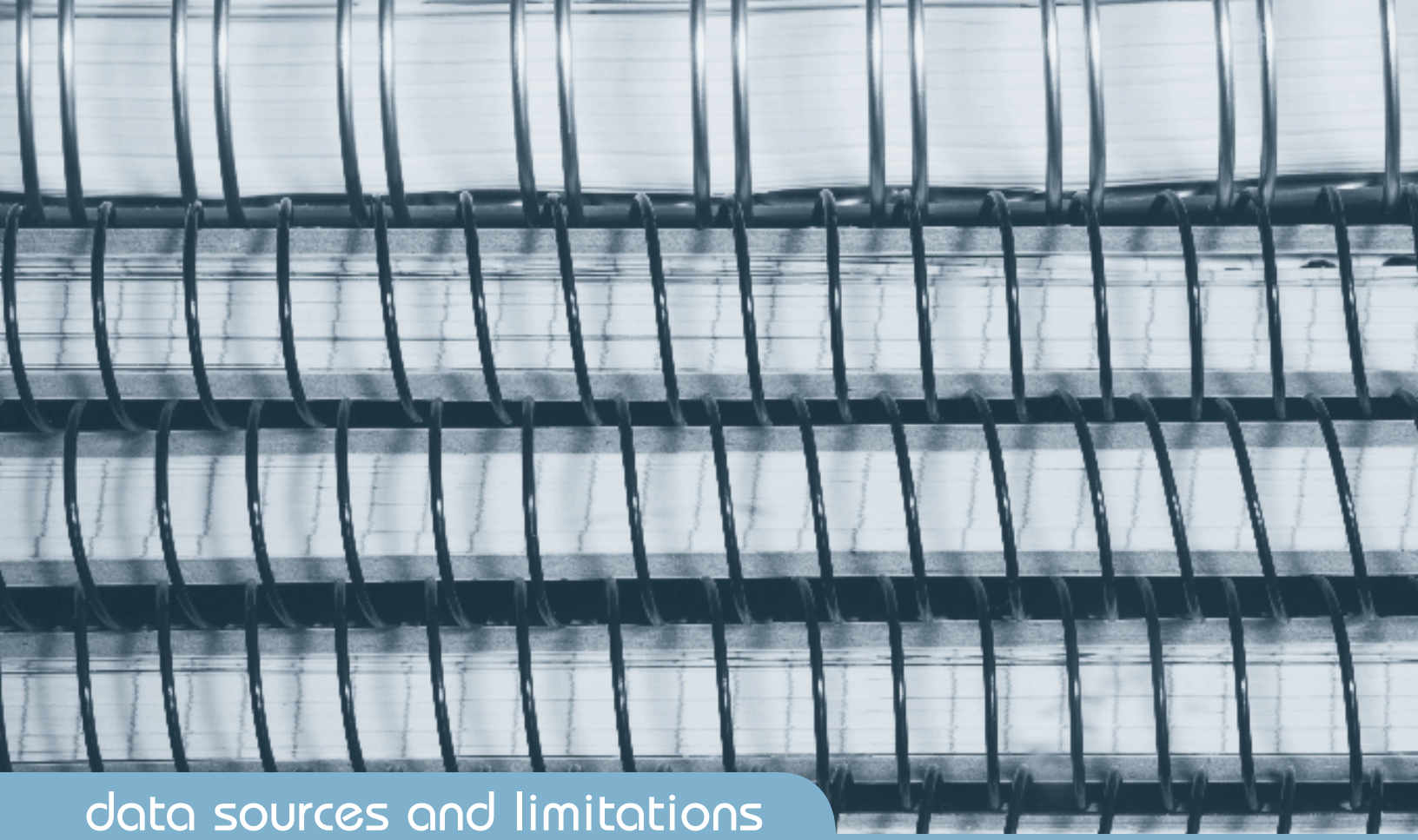

data sources and limitations

Numerous data sources were used in this report, including, but not limited to:

- Statistics Canada for Census data
- IntelliHEALTH of the Ontario Ministry of Health and Long-Term Care (MOHLTC) for population estimates, mortality, hospitalizations and emergency department visits data
- The Longitudinal Survey of Immigrants to Canada
- The Canadian Community Health Survey (2000/2001, 2003, 2005, 2007/2008, 2009/2010)
- The Rapid Risk Factor Surveillance System (2009, 2011) for health behaviour data.

Data were also obtained from Peel Public Health. For additional details about methods of analysis used in each of the Chapters of this report, refer to Chapter 12 – Data Methods.

Census Data

The Census is conducted every five years and data are collected by Statistics Canada. Although the most recent Census was conducted in May 2011, at the time of production of this report the vast majority of its data were not yet available. Therefore, this report primarily includes data from the Census that was conducted on May 16, 2006.

Limitations:

- The Census undercounts some groups, such as the homeless, young adults and Aboriginal people on reserves.
- Comparison between censuses is affected by changes in question wording and in the definition of the population concerned.

Mortality Data

The Office of the Registrar General obtains information about mortality from death certificates completed by physicians. All deaths within Ontario are registered in the office of the division registrar within which the death occurs. A Statement of Death must be filed with a division registrar before a Burial Permit can be issued.

Limitations:

- Co-morbidity contributes to uncertainty to classifying the underlying cause of death.
- Determining the true cause of death may be influenced by the social or legal conditions surrounding the death and by the level of medical investigation (e.g., AIDS, suicide).

Emergency Department Visit Data

Hospital emergency departments report patient visit information into the National Ambulatory Care Reporting System (NACRS), which began in July 2000. Data are not considered to be reliable until the fiscal year 2002/2003. Ambulatory visit data provide only a crude measure of the condition being quantified since a person may not seek care at an emergency department, or may visit several times for the same disease or injury, or may visit more than one hospital for the same disease or injury.

Limitations:

- Data are influenced by factors that are unrelated to health status, such as availability and accessibility of care, and administrative policies and procedures. This may influence comparisons between areas and over time.

Cancer Incidence and Mortality Data

The Ontario Cancer Registry (OCR) of Cancer Care Ontario registers all new cases of cancer in Ontario, as well as cancer-related deaths. All types of cancer are registered, except non-melanoma skin cancer. The system is passive and relies predominantly on administrative data. The OCR has four major data sources: hospital discharge summaries with cancer diagnoses; pathology reports with any mention of cancer; records from the Regional Cancer Centres or Princess Margaret Hospital; and death certificates with cancer as the underlying cause of death. Since the OCR may receive multiple reports for the same patient, computerized probabilistic record linkage is used to identify and remove duplicates.

Integrated Public Health Information System (iPHIS)

The communicable diseases data contained in this report are based on the list of diseases that are reportable to the local Medical Officer of Health under the authority of the Health Protection and Promotion Act (HPPA).

Limitations:

- The data include only those persons who were tested and/or diagnosed with a communicable disease by a health-care professional.
- There may be a delay in the time between when a person is infected and the time they are diagnosed and reported. The length of this delay may vary between different communicable diseases.

Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) is a Statistics Canada survey aimed at providing health information at the provincial, regional and health unit levels. The target population of the CCHS includes household residents in all provinces and territories, with the principal exclusion of populations on Indian Reserves, Canadian Forces Bases, and those living in institutions or more remote areas. There is one randomly selected respondent per household, with an over-sampling of youths resulting in a second member of certain households being interviewed. The CCHS sample is primarily a selection of dwellings drawn from the Labour Force Survey area sampling frame. For the regional level survey, the sample is supplemented with a random digit-dialling sample in some health regions.

The interview for the health region-level survey includes common content to be asked of all sample units, optional content determined by each health region from a predefined list of questionnaire modules, and socioeconomic and demographic content. A focused provincial-level survey consists of some general health content and one focus content topic per cycle. Focus content is intended to be an in-depth treatment of topical issues.

Prior to 2007, data were collected every two years on an annual period. Data presented for 2000/2001, 2003 and 2005 reflect this data collection method. Starting in 2007, major changes were made to the survey design in order to improve its effectiveness and flexibility through data collection on an ongoing basis. As a result, data collection now occurs every year, but for Peel a cycle is still considered to be a two-year period (e.g., 2007/2008, 2009/2010).

Data collection for the CCHS is done by either computer-assisted personal or telephone interviewing for the area sample or telephone interviewing for the random digit-dialling sample.

Limitations:

- Depending upon the question, data may be subject to recall bias, social desirability bias and errors from proxy reporting.
- Individuals and/or households without a telephone would be excluded from the sampling frame.
- Some analyses are limited by sample size.

Rapid Risk Factor Surveillance System

The Rapid Risk Factor Surveillance System (RRFSS) is an ongoing telephone survey occurring in various public health units across Ontario. Each month, a random sample of 100 adults aged 18 years and older is interviewed regarding awareness, knowledge, attitudes and risk behaviours of importance to public health, for example smoking, sun safety, use of bike helmets, and water testing in private wells. The Institute for Social Research (ISR) at York University conducts the survey on behalf of all RRFSS-participating health units.

Limitations:

- Depending upon the question, data may be subject to recall bias, social desirability bias and errors from proxy reporting.
- Individuals and/or households without a

telephone (household or cell) would be excluded from the sampling frame.
- In Peel, the survey is administered in English only.
- Some analyses are limited by sample size.

Longitudinal Survey of Immigrants to Canada

The Longitudinal Survey of Immigrants to Canada (LSIC) collected longitudinal data on immigrants arriving in Canada in order to better understand the adaptation process and to provide information on the factors that hinder or assist adjustment to Canada. The target population consisted of Canada's foreign-born population who: arrived in Canada between October 1, 2000 and September 30, 2001; were 15 years of age or older at the time of landing; and who 'landed' from abroad, and applied through a Canadian Mission abroad.[287]

In total, the LSIC included three "waves" of data collection: the first at six months (wave 1), then at two years (wave 2), and lastly at four years (wave 3) after arrival. For the results included in this report, only participants with valid postal codes for the Toronto CMA and those from whom data were collected in each of the three waves are included in the sample. There were 2,991 respondents for the Toronto CMA based on the immigrants destination in Canada.

An individual was randomly selected from each immigrating household unit to answer the LSIC questions. The survey contained information such as self-reported health, settlement location, sociodemographic characteristics, language, values and attitudes, and social networks of the respondent. Immigrant class is defined as economic arrivals (including skilled workers and business class arrivals), family reunification immigrants and refugees. By definition of the LSIC sampling frame, only convention refugees (i.e., claiming refugee status outside Canada) are included in the sample.

Peel Student Health Survey 2011

In March 2011, Peel Health conducted a Student Health Survey of students in the region of Peel between Grades 7 to 12 in partnership with the Dufferin-Peel Catholic District School Board and the Peel District School Board. The survey consisted of a questionnaire completed by students within randomly selected schools and classes. The survey captured information on a variety of topics, including eating habits, physical activity, substance use, mental health, bullying, injury and sun safety. Height and weight measurements were taken by a public health nurse for each participating student. In addition, a physical fitness assessment was conducted by trained assessors (for Grade 9 students only) and an oral health assessment was completed by public health dental hygienists (for Grades 10 and 12 only). The final sample included approximately 8,500 students from 37 elementary schools and 23 secondary schools.

Limitations:
- Data are not weighted to reflect the student population in Peel.
- Excluded by design are student drop-outs and students enrolled in French schools and private schools.
- Self-reported survey data have the potential for recall error and providing socially desirable answers.
- Due to the cross-sectional nature of the data, causal relationships cannot be inferred.

Senior Kindergarten Census

The Senior Kindergarten Census (SKC) was designed to be administered to all parents of children attending Senior Kindergarten in publicly funded school boards in Peel. Packages were sent home with each Senior Kindergarten child for all parents to complete in March 2010. Participation in the survey was voluntary.

Parent survey packages were sent to each elementary school in the four publicly funded school boards in Peel. Packages sent to the English school boards contained an English version of the questionnaire and those sent to the French school boards contained a French version of the questionnaire.

During the survey period, translation services were provided by CCI Research Inc. to respondents who preferred to complete the survey in a language other than English or French. Six surveys were completed in a language other than English or French.

Most questions on the SKC were derived from other surveys, including the National Longitudinal Survey of Children and Youth and the Kindergarten Parent Surveys from other communities in Ontario (including: The Offord Centre, Halton, Waterloo, Hamilton and Timiskaming).

A total of 14,493 surveys were sent home to parents. Of these, 6,743 completed surveys were returned (47%).

Limitations:

- Depending on the question, data may be subject to recall bias, social desirability bias and errors from proxy reporting.

Breastfeeding Survey – 2009/2010

In 2009/2010, Peel Public Health undertook a two-part telephone survey of new mothers in Peel. The study was designed to collect information regarding breastfeeding initiation and duration, as well as other breastfeeding practices among new mothers when their child was six-months old and again when their child was 12-months old. Mothers who never breastfed their infants were also asked about their awareness and utilization of resources. The target population for this survey was Peel mothers with six-month old children. Later, those who were still breastfeeding at six months were interviewed for a follow-up survey at 12-months post-partum. Data for the six-month survey were collected between December 1, 2009 and July 5, 2010. The final sample included 790 Peel mothers in Peel. For the 12 month survey, data were collected between June 17, 2010 and January 23, 2011 with 325 completed surveys.

Approximately 7% of the surveys completed at six-months postpartum were administered in languages other than English, including Arabic, Armenian, Gujarati, Hindi, Mandarin, Nepali, Polish, Punjabi, Spanish, Twi, Urdu and Vietnamese. Two per cent of the follow-up surveys at 12 months were completed in other languages.

Limitations:

- The potential for recall and social desirability biases.
- Respondents represent a non-random convenience sample of new mothers in Peel and therefore may not be representative of all new mothers.

data methods

General Methods

Within the majority of tables and figures of this report, values are presented to one decimal of precision while values in the text of the report are rounded to the nearest whole number. Due to rounding, some values may sum to more or less than 100%.

To ensure confidentiality, data were suppressed under the following conditions:

- Canadian Community Health Survey (CCHS): Unweighted numerators or counts less than 10 individuals and denominator counts of less than 30. Suppressed data are noted within the report as NR – not releasable due to small numbers.

- Rapid Risk Factor Surveillance System (RRFSS): Unweighted numerators or counts with less than five individuals. Suppressed data are noted within the report as NR – not releasable due to small numbers.
- Mortality or emergency department data counts with less than five individuals were suppressed. Suppressed data are marked within the report as NR – not releasable due to small numbers.

Ninety-five per cent confidence intervals are provided for many of the estimates provided in this report (e.g., percentages, rates). The confidence interval is a range of values which we are confident contains the true value of the estimate for the whole population 95% of the time, or 19 times out of 20. When the 95% confidence interval of one estimate does not overlap with that of another estimate, the estimates are statistically different from one another. Please note, if the confidence intervals of two estimates overlap, the reader should not assume that these estimate are not significantly different from one another. An appropriate statistical test would be required to assess whether the two estimates are statistically different from one another.

When comparing mortality or emergency department data for two populations, differences in the respective age distributions were controlled for by age-standardizing the crude rates. This minimizes the effect of differences in age distributions between populations so that observed differences can then be attributed to factors other than age. The direct age-standardization method was used for the calculation of rates with the 1991 Canadian population being used as the standard population.

For analyses using the Canadian Community Health Survey (CCHS) or the Rapid Risk Factor Surveillance Survey (RRFSS), outcomes of interest where a missing, do not know or refused response was greater than five per cent are included in the denominator. This is a different approach to previous reports and may result in numerical differences between reports.

Unless otherwise stated, all data presented from the CCHS and RRFSS have been weighted to account for the sampling method used.

Mortality Data Analysis

Age-standardized cancer mortality rates by immigrant status were calculated using custom Census 2006 profiles for Peel's immigrant and non-immigrant population by sex and five-year age group as the denominator. Since country of birth is available in the Ontario Mortality Database, numerator data were used from this source for 2005-2007 combined and it was assumed that those records with a country of birth other than Canada were immigrants, and those born in a Canadian province were coded as non-immigrants.

Although SEER*Stat contains cancer mortality data by country of birth, these data could not be obtained from SEER*Stat in a format condusive to the calculation of age-standardized rates by immigrant status.

Census Data Analysis

Immigrant status is defined as follows:

- Recent immigrant: arrived in Canada within the past five years
- Long-term immigrant: resident of Canada for more than five years
- Non-immigrant: Canadian-born population

Canadian Community Health Survey Data Analysis

Immigrant status is defined as follows:

- Recent immigrant: arrived in Canada within the past 10 years

- Long-term immigrant: resident of Canada for 11 or more years
- Non-immigrant: Canadian-born population

Within the CCHS, ethnicity was categorized as follows:

CCHS ethnicity is categorized into the following based on the population aged 12 years and older who responded to the question about their cultural and racial background at the time of the interview (Table 12.1). The pre-defined categories are in the survey were:

- White
- East/Southeast Asian, including Chinese, Filipino, Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese), Japanese, Korean
- West Asian/Arab, including Arab and West Asian (e.g., Afghan, Iranian)
- South Asian (e.g., East Indian, Pakistani, Sri Lankan)
- Latin American (e.g., Mexican, Caribbean, South American)
- Black
- Aboriginal people of North America (e.g.,North American Indian, Métis, Inui/Eskimo)
- Other (multiple responses across categories defined here, and non-response/don't know/refusal).

Table 12.1
Ethnicity of the Canadian Community Health Survey Respondents, Peel and Ontario, 2009/2010

	Peel		Ontario	
Ethnicity	Number	Per Cent	Number	Per Cent
White	1,352	54.6	33,726	83.5
Black	161	6.5	728	1.8
East/Southeast Asian	233	9.4	1,508	3.7
West Asian/ Arab	40	1.6	320	0.8
South Asian	461	18.6	1,169	2.9
Latin American	50	2.0	283	0.7
Other	89	3.6	519	1.3
Aboriginal	19	0.8	1,233	3.1
Not Stated	73	2.9	917	2.3
Total	2,478	100.0	40,403	100.0

Source: Canadian Community Health Survey 2009/2010, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care.

Household Income Categories from the CCHS

Based on the self-reported total household income and the number of individuals in the household, four ranked income categories were developed:

Table 12.2
Household Income Categories, Canadian Community Health Survey

Income Level	Income-Level Name	Number of People in the Household	Total Household Income
I1	Low-Lower Middle	1–2 people 3–4 people 5+ people	<$14,999 <$19,999 <$29,999
I2	Middle	1–2 people 3–4 people 5+ people	$15,000 to $29,999 $20,000 to $39,999 $30,000 to $59,999
I3	Upper Middle	1–2 people 3–4 people 5+ people	$30,000 to $59,999 $40,000 to $79,999 $60,000 to $89,999
I4	Highest	1–2 people 3 or more	More than $60,000 More than $80,000

Source: Canadian Community Health Survey, Statistics Canada.

Student Health Survey Data Analysis

The Student Health Survey ethnicity variable was derived by grouping responses to the ethnicity question into Statistics Canada's Ethnic Origin classifications. Responses that did not fit into a single ethic origin were placed in a multiple origin category which accounted for approximately 29% of all responses (Table 12.3). The categories into which they were grouped are:

- British Isles origins
- (Other) North American origins
- Caribbean origins
- Latin, Central and South American origins
- European origins
- African origins
- West Asian/Arab origins
- South Asian origins
- East and Southeast Asian origins
- Other origins (including Oceania, French and Aboriginal origins)

Table 12.3
Ethnicity of the Student Health Survey Repondents, Peel, 2011

Ethnicity	Number	Per Cent
North American	352	4.1
British	273	3.2
South Asian	1,894	22.2
Caribbean	617	7.2
African	238	2.8
European	1,051	12.3
Southeast Asian	943	11.1
West Asian/Arab	244	2.9
Latin American	196	2.3
Other	87	1.0
Multiple Origins	2,460	28.9
Missing	167	2.0
Total	**8,522**	**100.0**

Source: Student Health Survey, 2011, Peel Public Health.

When making international comparisons, countries selected for inclusion were those at the top and bottom of the ranking (e.g., the countries with the highest and lowest prevalence of overweight and obesity) and those with relevance based on the most significant immigrant groups in Peel. This included: India, United Kingdom, Italy, China, Portugal, Poland, Jamaica and the United States.

Breastfeeding Survey Analysis

The chi-square and Fisher's exact tests were used to test the statistical significance between demographic groups.

This report includes analysis that is considered exploratory. The statements made about statistical significance are based on multiple statistical tests; however, the resulting p-values have not been adjusted to account for these multiple testing effects.

As a result, some of the statements about statistically significant differences may be due to chance. The terms "more likely" and "less likely" are used to describe statistically significant differences in this report.

The ethnicity variable was based on the groupings in Table 12.4 and included multiple responses.

Table 12.4
Ethnic Origin of Peel Breastfeeding Survey Respondents

Ethnic Origin (multiple response)	Number
Canadian	113
East Asian	65
European	193
British	84
South Asian	237
Caribbean	75
South American	NR

Cancer Screening Participation Rates Analysis

Rates were calculated using Cancer incidence data from the Ontario Cancer Registry in 2010, screening data from the Institute for Clinical Evaluative Sciences and 2006 Census Data.

Senior Kindergarten Census Data Analysis

When estimating screen time per day among senior kindergarten students, a conservative estimate was calculated. Respondents were asked to indicate the length of time per day the child spends in sedentary behaviours including watching television (with or without an adult), using the computer and playing video games. Since the exact number of minutes per day that each child engaged in each activity is unknown, a conservative approximation was calculated using the minimum possible number of minutes the child could have been engaged in each activity given the response category chosen.

Comparisons between groups (e.g., immigrant status) were conducted using the applicable statistical test. A two-sided p-value of less than 0.05 was considered statistically significant. The SKC analyses in this report are considered exploratory. The statements made about statistical significance are based on multiple statistical tests; however, the resulting p-values have not been adjusted to account for these multiple testing effects. As a result, some of the statements about statistically significant differences may be due to chance.

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NOTES

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