

# HEALTH SURVEILLANCE INDICATORS: MULTIPLE BIRTHS



## Public Health Relevance

In multiple gestation pregnancies, both the mother and her babies are at higher risk for poor health outcomes. Mothers carrying multiples are more likely to have anemia, pre-eclampsia, and caesarean delivery, while multiple-birth babies are more likely to experience premature birth and low birth weight. Research has shown that in the long term, children born from multiple births may be at increased risk for cerebral palsy and other neurodevelopmental disabilities.

In the past 15 to 20 years, the incidence of multiple births has increased in Canada and other developed countries including England, France, and the United States. Factors contributing to this increase include advanced maternal age and more widespread use of assisted reproductive technologies (e.g., fertility drugs and in vitro fertilization).

## Highlights

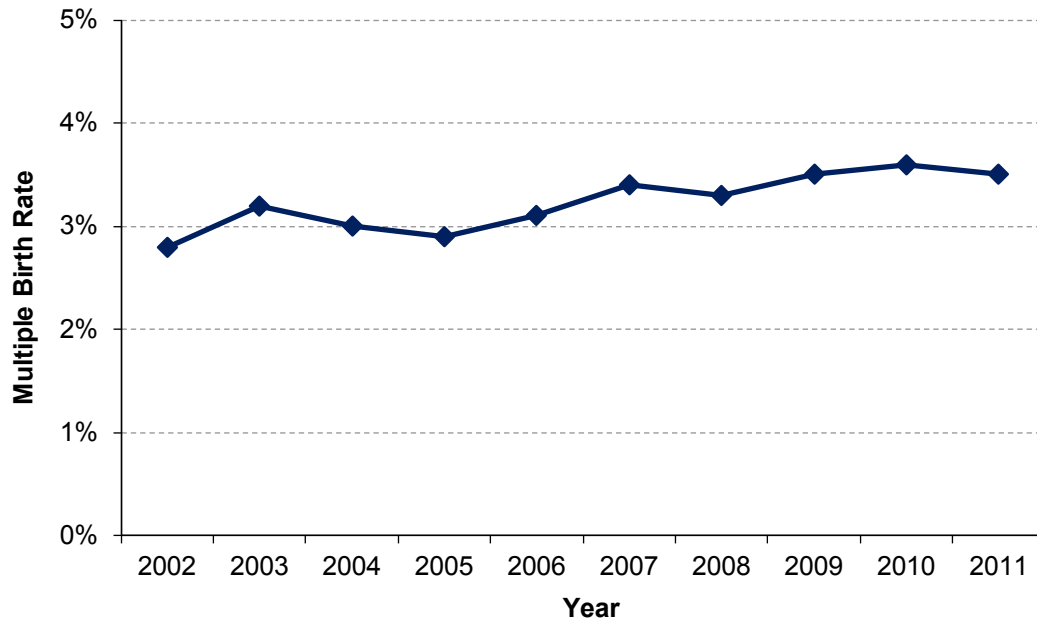
1. The multiple birth rate in Toronto increased significantly from 2002 to 2011.
2. The rate of multiple births for Toronto in 2011 was not significantly different from the rest of Ontario or the rest of the GTA.
3. From 2007 to 2011, areas of central and South Etobicoke, midtown and North Toronto, and East York had clusters of neighbourhoods with higher rates of multiple births than the City of Toronto overall.
4. In Toronto, the multiple birth rate was lower in babies born to foreign-born women compared to babies born to Canadian-born women in 2011.
5. Lower income groups had lower multiple birth rates than the highest income group in Toronto from 2007 to 2011.

## Trends Over Time

The multiple birth rate in Toronto increased significantly from 2002 to 2011.

Figure 1 shows the percent of Toronto babies from a multiple birth between 2002 and 2011. Over this period the rate of multiple births increased significantly, from 2.8% in 2002 to 3.5% in 2011.

**Figure 1: Multiple Birth Rate, Toronto, 2002 to 2011**



Source: see Data Notes.

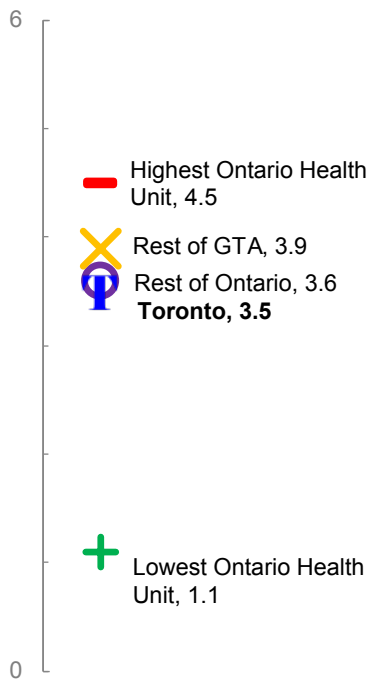
## Regional Comparisons

The rate of multiple births for Toronto in 2011 was not significantly different from the rest of Ontario or the rest of the GTA.

Figure 2 shows the rate of multiple births for Toronto in 2011 compared to the rest of Ontario (Ontario excluding Toronto), the rest of the Greater Toronto Area (GTA excluding Toronto), and the Ontario health units with the highest and lowest rates.

The rate of multiple births for Toronto was not significantly different from the rest of Ontario or the rest of the GTA. Toronto ranked 14<sup>th</sup> of the 36 health units in Ontario, with the first ranked health unit having the highest rate.

**Figure 2: Multiple Birth Rate, per 100 Live Births, Toronto Compared to Other Selected Regions in Ontario, 2011**



Source: see Data Notes

# Toronto Neighbourhood Comparisons

From 2007 to 2011, areas of central and South Etobicoke, midtown and North Toronto, and East York had clusters of neighbourhoods with higher rates of multiple births than the City of Toronto overall.

Map 1 shows the multiple birth rate by Toronto neighbourhood for 2007 to 2011 combined.

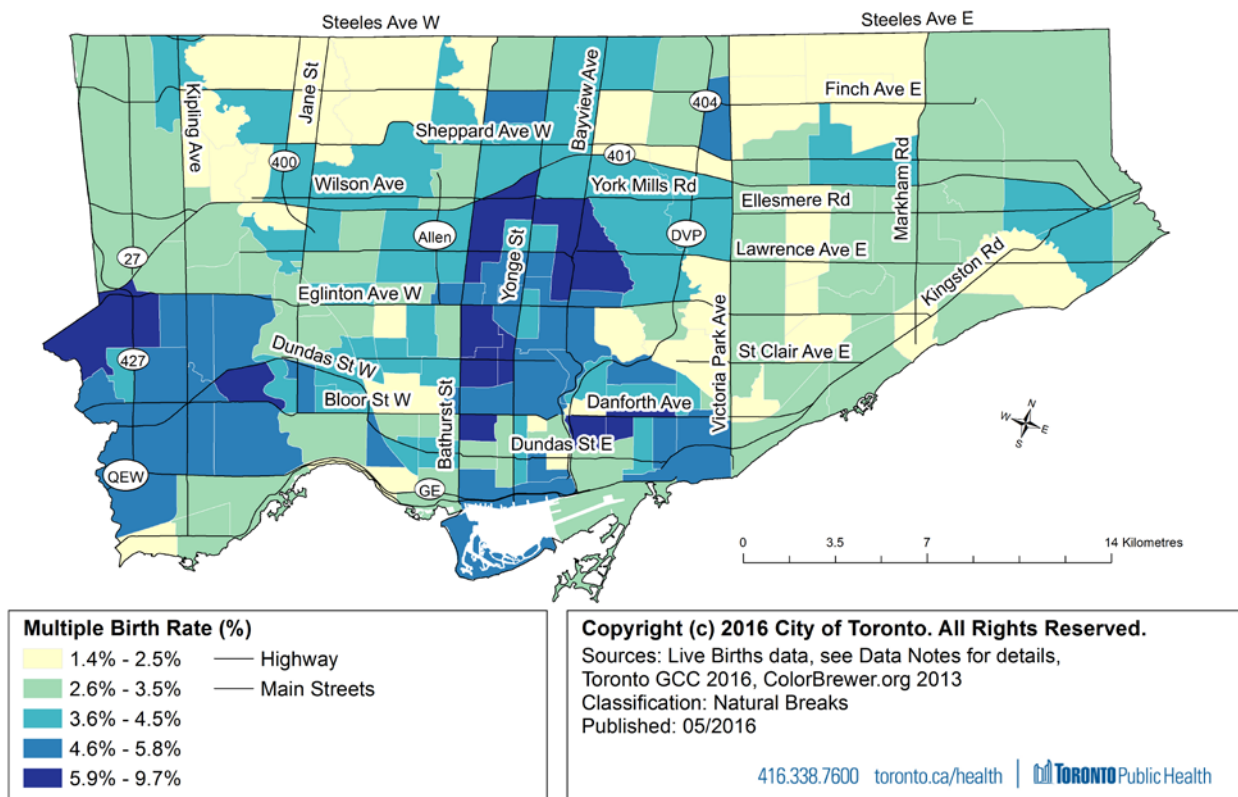
Areas in central and south Etobicoke, midtown and north Toronto, and East York had clusters of neighbourhoods with higher rates of multiple births than the city overall. Neighbourhoods with significantly higher rates included:

- Blake-Jones
- Eringate-Centennial-West Deane
- Forest Hill South
- Kingsway South
- North Riverdale
- Yonge-St. Clair

Areas in northwest Toronto and Scarborough had clusters of neighbourhoods with lower rates of multiple births than the city overall. Neighbourhoods with significantly lower rates included:

- Agincourt North
- Elms-Old Rexdale
- North St. Jamestown
- Pelmo Park-Humberlea
- Playter Estates Danforth
- Regent Park

**Map 1: Multiple Birth Rate, by Neighbourhood, Toronto, 2007 to 2011 Combined**



## Socio-demographics

In Toronto, the multiple birth rate was lower in babies born to foreign-born women compared to babies born to Canadian-born women in 2011. Lower income groups had lower multiple birth rates than the highest income group in Toronto from 2007 to 2011.

In 2011, just under 1,100 Toronto babies were from a multiple birth. The most common type of multiple birth was twins, followed by triplets. There were also a few cases of higher-order multiple births (four or more babies). Tables 1, 2, and 3 show the distribution of multiple birth babies and the rate of multiple births by selected birth and maternal demographic characteristics.

There was no significant difference in the rate of multiple births between sexes. Approximately half of the multiple-birth babies were boys and the other half girls.

Multiple birth rate increased with mother's age. Approximately 1% of babies born to mothers under the age of 25 were multiple births, compared to 6% in babies born to mothers aged 40 and over.

The multiple birth rate was significantly higher in babies born to Canadian-born women compared to babies born to foreign-born women.

**Table 1: Distribution of Multiple Births and Multiple Birth Rate by Sex, Toronto, 2011**

Newborn Sex	Multiple Births	Total Births	Multiple Birth Rate
Female	541	14,836	3.6%
Male	532	15,692	3.4%

Source: see Data Notes.

**Table 2: Distribution of Multiple Births and Multiple Birth Rate by Age Group of Mother, Toronto, 2011**

Mother's Age Group	Multiple Births	Total Births	Multiple Birth Rate
<25	41	3,389	1.2% <b>L</b>
25 to 29	200	7,367	2.7% <b>L</b>
30 to 34	351	10,901	3.2%
35 to 39	363	6,966	5.2% <b>H</b>
40+	117	1,894	6.2% <b>H</b>

**H** Significantly higher than overall Toronto rate.

**L** Significantly lower than overall Toronto rate.

Source: see Data Notes.

**Table 3: Distribution of Multiple Births and Multiple Birth Rate, by Mother's Place of Birth Toronto, 2011**

Mother's Place of Birth	Multiple Births	Total Births	Multiple Birth Rate
Canada	470	11,460	4.2% <sup>H</sup>
Outside of Canada	570	18,169	3.1%

<sup>H</sup> Significantly higher than the multiple birth rate of mothers born outside of Canada.

Source: see Data Notes.

Table 4 shows the rate of multiple births by income quintile for 2007 to 2011 combined. Quintile 1 contains the areas in Toronto with the highest percent of people living below the low income measure (LIM), making it the lowest income quintile. Quintile 5 contains the areas in Toronto with the lowest percent of people living below the LIM, making it the highest income quintile.

The rate of multiple births increased with increasing income. The four lower income groups (Quintiles 1 to 4) had significantly lower multiple birth rates than the highest income group (Quintile 5). Compared to Toronto overall, the multiple birth rate was significantly lower in Quintiles 1 and 2 and significantly higher in Quintile 5.

**Table 4: Multiple Birth Rate, by Income Quintile, Toronto, 2007 to 2011 Combined**

Income Quintile	Multiple Birth Rate
Quintile 1 (Lowest)	2.9% <sup>L</sup>
Quintile 2	2.9% <sup>L</sup>
Quintile 3	3.2% <sup>L</sup>
Quintile 4	3.5% <sup>L</sup>
Quintile 5 (Highest)	5.1%

<sup>L</sup> Significantly lower than Quintile 5, the highest income group.

Source: See Data Notes.

## Data Notes

### Notes

- Significant differences were estimated using overlapping confidence intervals. Although this method is conservative ( $\alpha < 0.01$ ) and most appropriate when comparing mutually exclusive groups, it was chosen as an objective means of making conclusions on population-based data. Also note that the multiple comparisons performed in the analysis were not taken into consideration when choosing the level of significance to test.
- Time trend analysis is based on data from the most recent 10 year period or, when there are fewer than 10 years of data, from the earliest available year of complete and reliable data.
- Map 1 is based on five years of data combined in order to obtain sufficient number of multiple births for analysis at the neighbourhood level. By combining multiple years of data, changes over time in and between geographical areas may be hidden.
- Toronto is compared to Ontario excluding Toronto and to the Greater Toronto Area (GTA) excluding Toronto rather than to Ontario and the GTA including Toronto because Toronto comprises such a large proportion of these two areas. Excluding Toronto therefore results in more meaningful comparisons.
- Totals from Tables 1, 2, and 3 may not match the overall total because analyses excluded birth records with missing information. Similarly, Table 4, the income quintile analysis, excluded birth records that could not be linked to a Toronto census tract.
- This analysis includes only live births and excludes all stillbirths from both the numerator and denominator when calculating multiple birth rate.

### Definitions

**GTA excluding Toronto** means the Greater Toronto Area (GTA) with Toronto removed from the GTA data.

**Income Quintiles** are five groups, each containing approximately 20% of the population. They were created by ranking Toronto's census tracts based on the percent of residents living below the Statistics Canada's after-tax Low Income Measure (LIM), using the 2010 income tax file data. Quintile 1 includes the census tracts with the highest percent of people living below the LIM and is therefore the lowest income quintile. Quintile 5 includes the census tracts with the lowest percent of people living below the LIM, making it the highest income quintile. LIM is an income level set at 50% of the median family income in Canada in a given year, adjusted for household size.

**Multiple Birth** means when two or more foetuses are carried to birth in a single pregnancy. Common types of multiple births include twins and triplets; higher-order births (four or more babies) may also occur in rare circumstances. Multiple birth rate is the percent of live births that are from a multiple birth.

**Ontario excluding Toronto** means Ontario with Toronto removed from the Ontario data.

**Sex** defines people based on their biological characteristics, whereas gender is a socially constructed concept. From a social determinants of health perspective, certain health conditions can be associated with gender, and from a biological perspective, health conditions can be associated with sex. Although reporting based on both concepts would be preferable, the data source used here only collects information on sex, and not gender.

### Source

**Live Births**, Vital Statistics 2002 to 2011, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 2013. Used in:

- Figures 1 and 2
- Tables 1, 2, 3 and 4
- Map 1

Health Surveillance Indicator: Multiple Births

Category: Reproductive Health

Prepared: August, 2017

This indicator report is part of a series that informs the ongoing assessment of Toronto's health status. For a full list of the indicators, please go to: [www.toronto.ca/health](http://www.toronto.ca/health)