



Youth Smoking Survey (Number 7)

Prevalence of Cigarette and Cigar or Cigarillo Use Among Students in Québec: 2010-2011

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HIGHLIGHTS

- In 2010-2011, the prevalence of cigarette use among Secondary 1 to 5 students was higher in Québec (12%) than in the rest of Canada (9%).
- Unlike the situation in 2006-2007, cigarette use was more prevalent than cigar or cigarillo use among secondary school students in Québec as a whole in 2010-2011.
- The proportion of occasional smokers and beginning smokers is similar among girls and boys, with, however, a proportionally higher number of boys than girls smoking every day (daily smoker status).
- There are differences between girls and boys with respect to the type of tobacco product used; cigarette use is more prevalent among girls, while cigar or cigarillo use was more common among boys.
- A higher proportion of boys than girls reported using a combination of cigarettes and cigars or cigarillos in the 30 days preceding the survey.

BACKGROUND

The publication of the second issue in the “Youth Smoking Survey” (YSS) series in 2010 showed the trends in cigarette and cigar or cigarillo use among students in Québec in 2006-2007 (Lasnier and Cantinotti, 2010). The purpose of this document is to update the smoking profile of Secondary 1 to 5 students using data collected in 2008-2009 and 2010-2011. Indicators are presented for the proportion of students who smoked cigarettes in the 30 days preceding the survey, the proportion of smokers by smoking status, as well as the proportion of students who used alternative tobacco products (cigars, cigarillos and little cigars) in the last 30 days.

DATA

Estimates of the prevalence of cigarette or cigar/cigarillo use among Secondary 1 to 5 students were based on students who reported using one of these products in the last 30 days.

Students who reported having smoked a whole cigarette were asked how many cigarettes they had smoked in their lifetimes by the question “Have you ever smoked 100 or more whole cigarettes in your life?” Respondents who had not smoked at least 100 cigarettes in their lifetimes were classified as **beginning smokers**. Respondents were then asked the question “On how many of the last 30 days did you smoke one or more cigarettes?” Of respondents who were not already classified as beginning smokers, those who answered 30 days, i.e., every day, were classified as **daily smokers**, while those who marked a number between 1 and 29 were classified as **occasional smokers**.

The following typology is used in the document:

Smoker: Students who have smoked at least one whole cigarette in the last 30 days.

Daily smoker: Students who have smoked at least 100 whole cigarettes in their lifetimes and who have smoked every day in the last 30 days.

Occasional smoker: Students who have smoked at least 100 whole cigarettes in their lifetimes and who have smoked in the last 30 days, but not every day.

Beginning smoker: Students who have smoked fewer than 100 whole cigarettes in their lifetimes, but who have smoked in the last 30 days.

In 2008-2009 and 2010-2011, cigar or cigarillo/little cigar use was assessed by two questions: “In the last 30 days, did you use any of the following: cigarillos or little cigars (plain or flavoured)?” and “In the last

30 days, did you use any of the following: cigars (not including cigarillos or little cigars, plain or flavoured)?” In 2006-2007, the question students were asked was formulated to include cigars, cigarillos and little cigars: “In the last 30 days, did you use any of the following: cigars, cigarillos or little cigars (plain or flavoured)?” For reasons of comparability, students who answered “yes” to one of these questions were considered cigar, cigarillo or little cigar smokers, irrespective of their frequency of use in the past 30 days. For ease of reading, **the term “cigarillo” will be used in the remainder of the document to refer to both little cigars and cigarillos.**

RESULTS

Cigarette use among students in Canadian provinces, 2010-2011

The updated data on the prevalence of cigarette use by province among Secondary 1 to 5 students show that Québec (12%) ranked higher than the rest of Canada (9%) in 2010-2011, which is a significant difference ($p < 0.05$).

In four provinces, the prevalence of cigarette use among students was significantly lower than in Québec, namely, Ontario (6%), Prince Edward Island (9%), Manitoba (10%) and Alberta (10%) (Figure 1). In three provinces, the prevalence was significantly higher than in Québec in 2010-2011, namely, Saskatchewan (17%), Newfoundland and Labrador (15%) and Nova Scotia (14%).

The situation in 2010-2011 differed in some respects to that in 2006-2007; a number of provinces saw a significant decline ($p < 0.05$) in their prevalence of cigarette use between the two surveys, down 6 percentage points in Manitoba, 3 percentage points in Québec, Ontario and British Columbia, and 2 percentage points in Prince Edward Island.

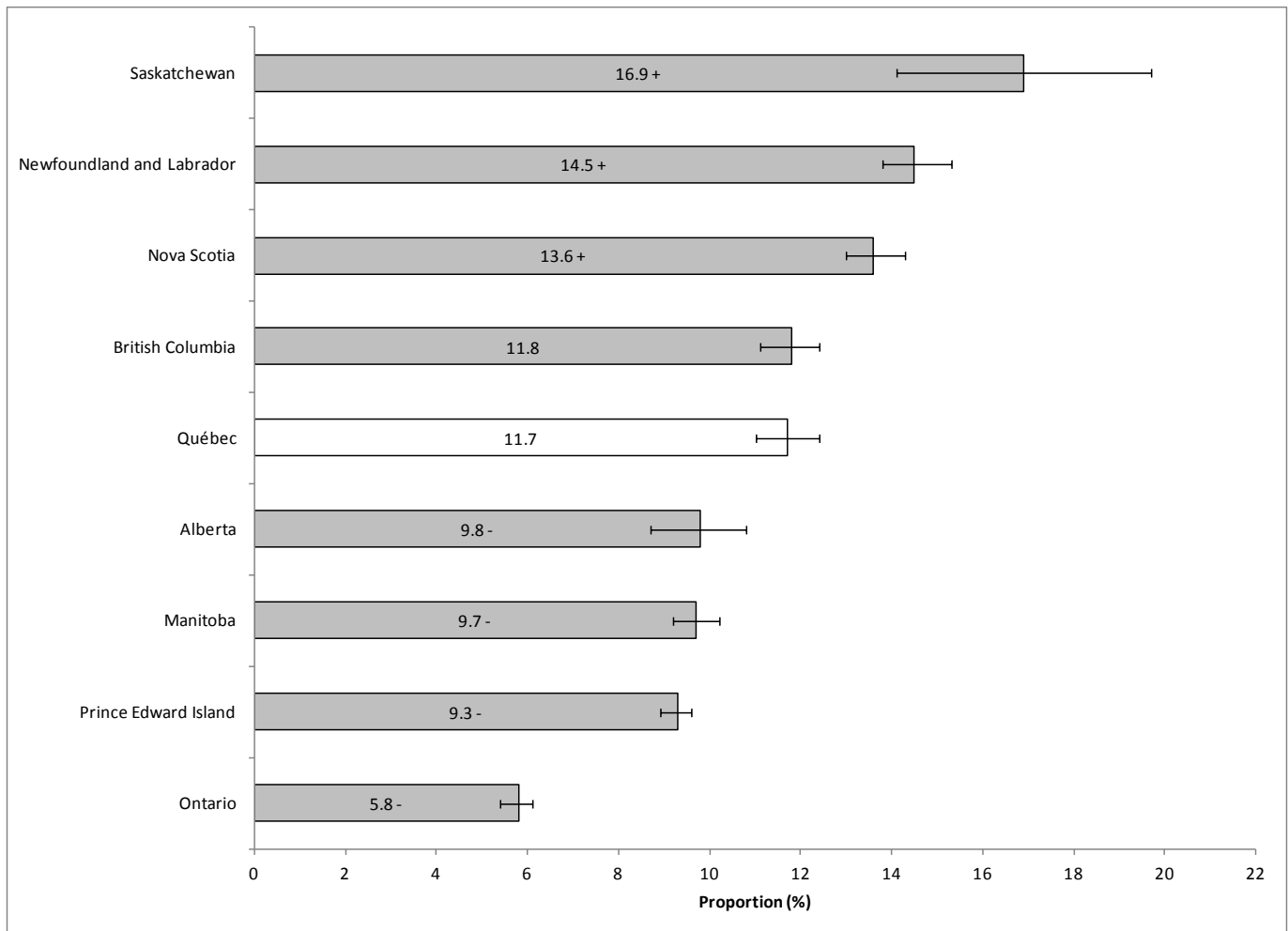


Figure 1 Proportion of students who have smoked at least one cigarette in the last 30 days by province, Secondary 1 to 5 students, Canadian provinces, 2010-2011

+ Proportion significantly higher than in Québec ($p < 0.05$).
 - Proportion significantly lower than in Québec ($p < 0.05$).

Evolution of cigarette use among students in Québec by grade, 2006-2007 to 2010-2011

The proportion of cigarette smokers among secondary school students in Québec fluctuated considerably between 2006-2007 and 2010-2011 (Figure 2). While a rise in cigarette smoking rates was observed between 2006-2007 and 2008-2009, the rate was significantly lower in 2010-2011 than in 2008-2009 ($p < 0.05$) for all high school grades.

In general, cigarette use increased with grade level, with the highest prevalence among Secondary 5 students (16% in 2010-2011). However, the proportion of cigarette smokers among Secondary 4 students was similar to that in Secondary 3 for each of the three YSS cycles studied.

Overall, the rates observed in 2010-2011 point to a return to the situation that prevailed in 2004-2005, falling back to around 10% in the Secondary 1 to 3 student population after increasing to 13% and 17% in 2006-2007 and 2008-2009 respectively (data not

shown). It is worth remembering that at the time of the first YSS, in 1994, the estimated prevalence of

cigarette use was 30% for the Secondary 1 to 3 student population in Québec (data not shown).

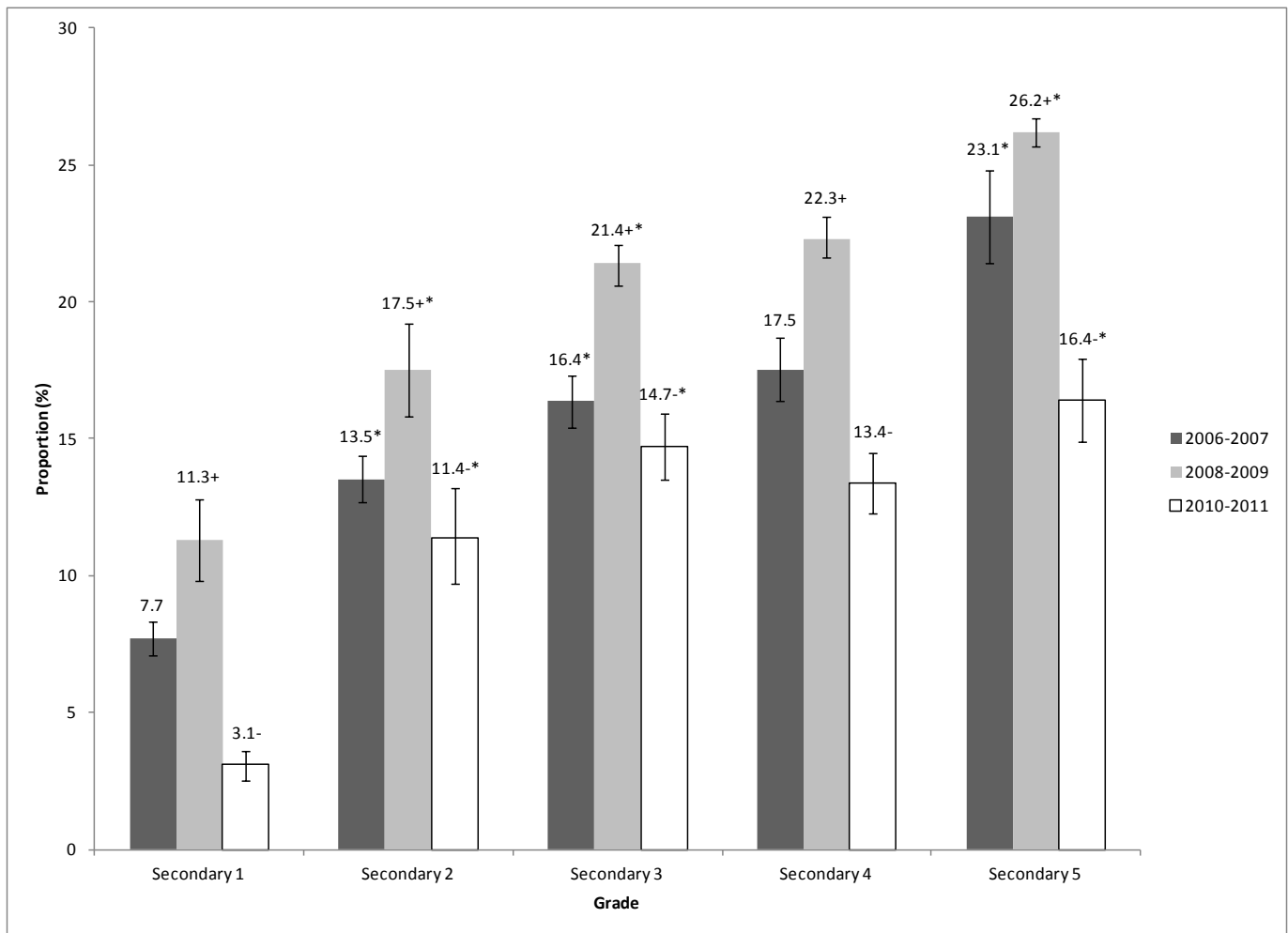


Figure 2 Evolution of the proportion of cigarette smokers by grade, Secondary 1 to 5 students, Québec, 2006-2007 to 2010-2011

- + Proportion significantly higher than in the previous survey ($p < 0.05$).
- Proportion significantly lower than in the previous survey ($p < 0.05$).
- * Proportion significantly different from the previous grade ($p < 0.05$).

Evolution of cigarette use among students in Québec by smoking status, 2006-2007 to 2010-2011

An analysis of the data on the smoking status of secondary school students (definitions of types of smokers on page 2) indicates that the proportions of daily, occasional and beginning smokers in Québec

were significantly lower in 2010-2011 than in 2006-2007 ($p < 0.05$) (Figure 3). This also represents a marked decrease compared with the proportions observed in 2008-2009, when an increase was noted in the prevalence of cigarette use among students in Québec. A total of 12% of secondary school students in Québec reported having smoked cigarettes in the

past 30 days, which is significantly lower than the 15% rate in 2006-2007 and the 20% rate in 2008-2009 (Figure 3).

Moreover, the proportion of each category of smoker was significantly higher in Québec in 2010-2011 than in all other Canadian provinces, whether for daily smokers (3% versus 2%), occasional smokers (4% versus 3%) or beginning smokers (5% versus 4%) (data for all other provinces not shown). A similar finding had already been made based on 2006-2007

data, although the survey population at that time included Grade 5 and 6 primary school students (Lasnier and Cantinotti, 2010).

The proportions observed in Québec among girls and boys for the different types of smokers generally tend to be similar, with, however, a proportionally higher number of boys than girls smoking every day (data not shown). Moreover, the proportion of beginning smokers increases significantly among girls and boys between Secondary 1 and 3 (data not shown).

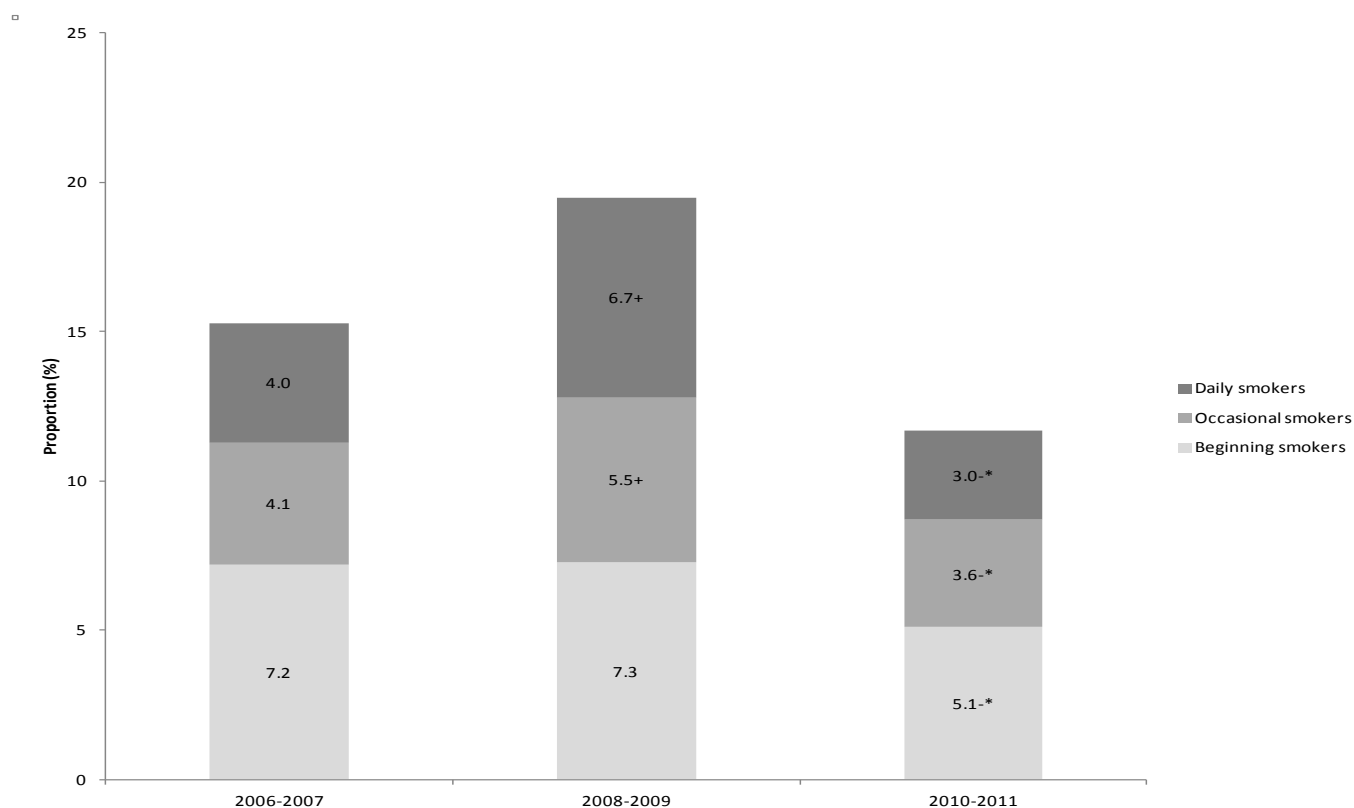


Figure 3 Evolution of the proportion of cigarette smokers by smoking status, Secondary 1 to 5 students, Québec, 2006-2007 to 2010-2011

- + Proportion significantly higher than in the previous survey ($p < 0.05$).
- Proportion significantly lower than in the previous survey ($p < 0.05$).
- * Proportion significantly different from 2006-2007 ($p < 0.05$).

↷ *Evolution of tobacco product use (cigarettes, cigars or cigarillos) among students in Québec, 2006-2007 to 2010-2011*

The prevalence of cigarette use in 2010-2011 (12%), as well as that of cigars or cigarillos (10%), declined compared with 2008-2009, down around 7 percentage points for both types of tobacco products (Figure 4). Unlike in 2006-2007, cigarette use exceeded cigar or cigarillo use in 2008-2009 and 2010-2011 among

secondary school students in Québec, as was the case in all other Canadian provinces (data not shown).

Overall, the prevalence of tobacco product use (cigarettes and/or cigars or cigarillos) among secondary school students in Québec was 15% in 2010-2011, a significant decrease from the rates reported in 2008-2009 (25%) and 2006-2007 (23%) ($p < 0.05$) (data not shown).

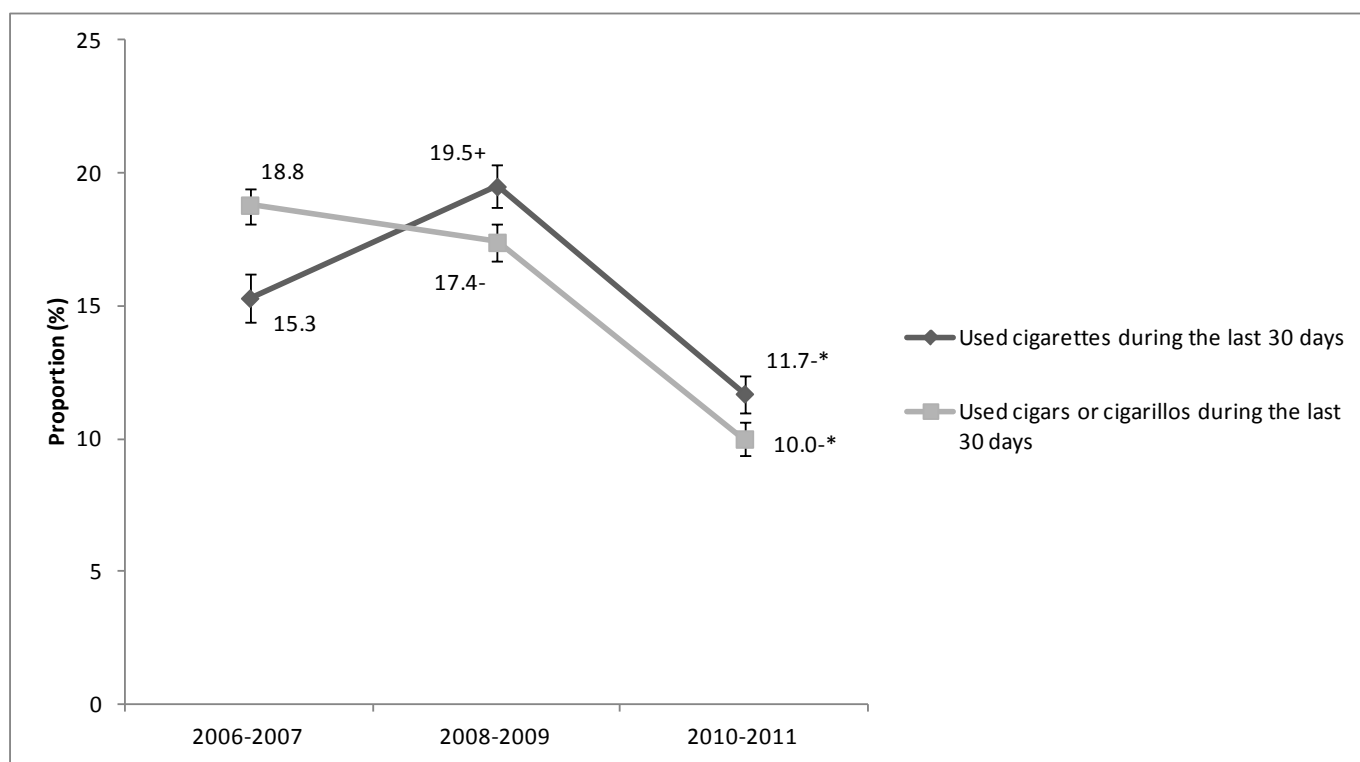


Figure 4 Evolution of the proportions of cigarette smokers and cigar or cigarillo smokers, Secondary 1 to 5 students, Québec, 2006-2007 to 2010-2011

- + Proportion significantly higher than in the previous survey ($p < 0.05$).
- Proportion significantly lower than in the previous survey ($p < 0.05$).
- * Proportion significantly different from 2006-2007 ($p < 0.05$).

↷ *Tobacco product use (cigarettes and/or cigars or cigarillos) among students in Québec by grade, 2010-2011*

A breakdown by grade reveals that the prevalence of cigarette use among secondary school students in Québec in 2010-2011 exceeded that of cigar or

cigarillo use in the last 30 days, except in Secondary 5 (Figure 5). The same breakdown also reveals another trend, namely, the proportion of secondary school students who had smoked cigars or cigarillos in the last 30 days increases with grade level (from 3% among

Secondary 1 students to 17% among Secondary 5 students).

Starting in Secondary 2, the proportion of students who smoked only cigars or cigarillos in the past 30 days increases with each grade (Figure 5). Furthermore, the proportion of students who reported using both cigarettes and cigars or cigarillos in the last 30 days increases significantly with grade level, except in Secondary 4.

There are differences between girls and boys with respect to the type of tobacco product used; cigarette use is more prevalent among girls, whereas a higher proportion of boys smoke cigars or cigarillos (data not shown). Lastly, a higher proportion of boys than girls reported using a combination of the two types of tobacco product in the past 30 days (data not shown). In other Canadian provinces, cigar or cigarillo use and the combined use of these two types of product was also higher among boys than girls.

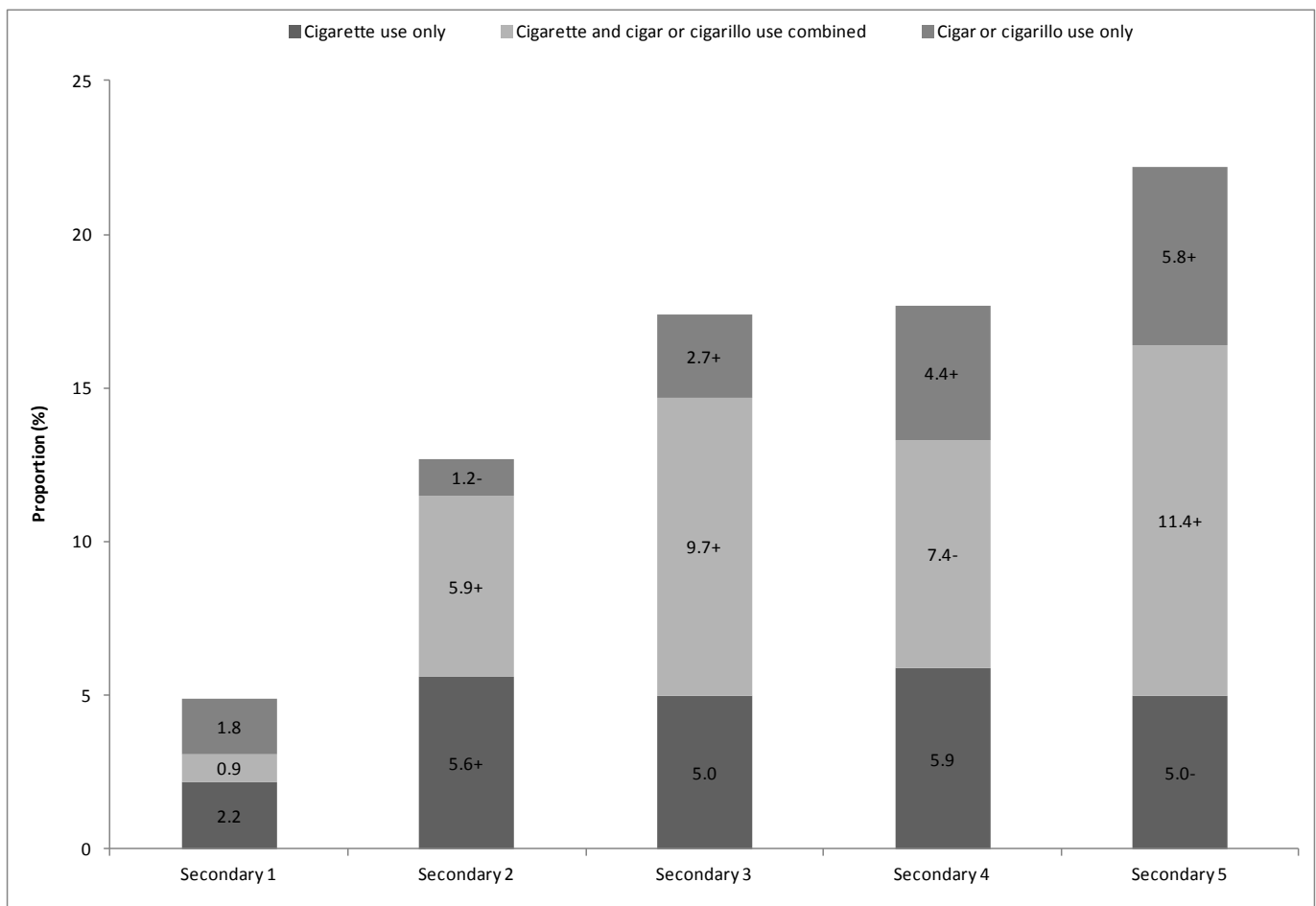


Figure 5 Proportion of students who have used tobacco products (cigarettes, cigars or cigarillos) in the last 30 days by grade, Secondary 1 to 5 students, Québec, 2010-2011

- + Proportion significantly higher than for the same category in the previous grade ($p < 0.05$).
- Proportion significantly lower than for the same category in the previous grade ($p < 0.05$).

DISCUSSION

The most recent estimates for smoking behaviour among students in Québec and the rest of Canada point to a decline in cigarette and cigar or cigarillo use. After a resurgence in smoking in 2008-2009, a significant decrease in the prevalence of cigarette use was seen among students across all grades in Québec in 2010-2011. The proportion of beginning smokers among secondary school students in Québec as a whole decreased significantly between 2006-2007 and 2010-2011, which is an encouraging sign in terms of the goal to reduce smoking initiation among youth. Despite this, the prevalence of cigarette use among Secondary 1 to 5 students remains higher in Québec than the average of the other Canadian provinces. This difference is observed for each of the first three years of secondary school. The focus must therefore be on preventing smoking initiation during the critical early years of secondary school.

Consumption patterns among students in Québec in 2010-2011 varied with gender, with differences found between girls and boys with respect to the type of tobacco product used. Cigar or cigarillo use appeared to be more prevalent among boys, as was the combined use of cigarettes and cigars or cigarillos. In addition, a proportionally higher number of boys than girls smoked cigarettes every day. The reasons why boys tend to use cigars or cigarillos more than girls need to be clarified; an analysis of the tobacco industry's marketing strategies for these types of products could indicate avenues to explore.

The typical smoking profile of secondary school students has changed somewhat in recent years, with cigarette use appearing to surpass cigar or cigarillo use once again. Nonetheless, the latter two continue to be

used by a significant proportion of secondary school students. The combined use of cigarettes and cigars or cigarillos remains the most common consumption pattern among young smokers in Québec for both boys and girls. The finding that a significant proportion of cigarette smokers also use other tobacco products has been made in numerous studies (Brooks et al., 2008; Everett et al., 2000; Fraizer et al., 2000; Gilpin and Pierce, 2003; Soldz, Huysen and Dorsey, 2003; Tercyak and Audrain, 2002).

Although school-based health surveys already contain enough questions to determine student smoking status with respect to cigarette use (having smoked one whole cigarette in his/her lifetime, having smoked one whole cigarette in the 30 days preceding the survey, having smoked 100 cigarettes in his/her lifetime), the situation is quite different when it comes to cigar or cigarillo use. Therefore, it would be appropriate if future cycles of surveys conducted to estimate the prevalence of tobacco product use and smoking status among students were to include questions about having smoked 100 cigars or cigarillos as well as about the age of initiation to the use of these products (first puffs, first whole unit smoked).

The proposed additions would allow youth smoking status to be more clearly defined and smoking prevalence and trends among students in Québec and other Canadian provinces to be more comprehensively assessed. A better understanding of trends in youth tobacco use in Québec, based on the type of product used, frequency of use and the number of units used, would allow smoking prevention efforts to be more effectively targeted and the future impact of smoking on the health burden and the use of Québec's health system to be more accurately determined.

ABOUT THE CANADIAN YOUTH SMOKING SURVEY

The first Youth Smoking Survey (YSS) was conducted in 1994 by Statistics Canada for Health Canada; subsequent surveys have been conducted biennially since 2002. Since 2004, the YSS has been the subject of an agreement between Health Canada and the Propel Centre for Population Health Impact of the University of Waterloo. In Québec, the study was conducted on two occasions by the Institut national de santé publique du Québec (INSPQ) [Québec public health institute], in collaboration with McGill University (2004–2005) and the CHUM research centre (2006–2007). The Québec component of the 2008–2009 survey was conducted by the CHUM research centre, while the 2010–2011 survey was conducted by Québec en Forme. This survey differs from the Québec Survey on Smoking, Alcohol, Drugs and Gambling in High School Students, carried out on a biennial basis by the Institut de la Statistique du Québec from 1998 to 2008.

Data for the 2010–2011 edition of the YSS were collected from October 2010 to June 2011, and recruitment in school boards and schools began in February and April 2010 respectively. Among the selected schools, all students in the educational levels targeted by the survey were eligible to be included in the final sample. The questionnaire was held in the classrooms.

In 1994, 1 303 students in Québec and 9 491 students in Canada (5th to 9th grade) participated in the first YSS. In 2002, 3 229 students in Québec and 19 018 students in Canada (5th to 9th grade) participated in the second YSS. In 2004–2005, 3 644 students in Québec and 29 243 students in Canada (5th to 9th grade) participated in the third YSS. In 2006–2007, 12 963 students in Québec and 71 003 students in Canada (5th to 12th grade) participated in the fourth YSS. In 2008–2009, 8 446 students in Québec and 51 922 students in Canada (6th to 12th grade) participated in the fifth YSS. In 2010–2011, 4 266 students in Québec and 50 949 students in Canada (6th to 12th grade) participated in the sixth YSS.

This analysis is based on anonymized data from the public use microdata files of the Youth Smoking Survey, 2006–2007 to 2010–2011, University of Waterloo. Calculation and interpretation of the data presented in this document was the author's responsibility.

The estimations and confidence intervals were calculated according to the recommendations of the Main Microdata User Guide of the YSS survey, by using all of the 500 bootstrap weights accompanying the survey data. Determination of the statistical significance of a comparison between two estimates is based on the results of the proportion difference tests, also using the bootstrap weights. The Bonferroni correction was applied when multiple proportion comparisons were done. It should be noted that the difference tests used are less conservative than the comparison of the confidence intervals related to the proportions. They are therefore likely to identify significant statistical relationships that would not be shown by the comparison of confidence intervals.

The YSS survey has a few methodological limitations. First, the information collected from the respondents is self-reported and may consequently be subject to a recall bias or social desirability bias. Also, it must be mentioned that certain subgroups of youth were not included in the target population, more precisely youth living in the Yukon, Northwest Territories or Nunavut, youth living in institutions or on a First Nations reserve, youth attending special schools or schools located on a military base, as well as youth not in a school environment (e.g., dropouts). Finally, the province of New Brunswick did not participate in the 2010–2011 YSS.

For more information on the methodology used in the YSS, consult the survey's Website at the following address: www.yss.uwaterloo.ca.

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ACKNOWLEDGEMENTS

Production of this document was made possible by a financial contribution from the Ministère de la Santé et des Services sociaux [Québec's ministry of health and social services]. The views expressed herein do not necessarily reflect the views of the Ministère de la Santé et des Services sociaux.

Administration of the Youth Smoking Survey was made possible by a financial contribution from Health Canada. The views expressed herein do not necessarily reflect the views of Health Canada.

The author would like to thank the Propel Centre for Population Health Impact at the University of Waterloo for providing support for this project.

Special thanks are due to the following people who participated in the revision of the document:

Annie Montreuil, Ph.D., Institut national de santé publique du Québec

Claire Jutras, M.D., Direction de santé publique de l'Agence de la santé et des services sociaux des Laurentides

France Tissot, M.Sc., Institut national de santé publique du Québec

Francine Hubert, B.A., Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal

Johanne Laguë, M.D., M.Sc., FRCPC, Institut national de santé publique du Québec

Marie Jacques, M.Sc., Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal

Michael Cantinotti, Ph.D., Département de psychologie – sciences sociales, Université du Québec à Trois-Rivières



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Translation:

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The translation of this publication was made possible
with funding from the Public Health Agency of Canada.

Publication N°: 1986

*This document is available in its entirety in electronic format (PDF) on the Institut national de
santé publique du Québec Web site at: <http://www.inspq.qc.ca>.*

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LEGAL DEPOSIT – 2nd QUARTER 2015

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ISSN: 1922-2475 (PDF)

ISBN: 978-2-550-69538-7 (FRENCH PDF)

ISBN: 978-2-550-73102-3 (PDF)

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