



# QUEBEC FIRST NATIONS REGIONAL HEALTH SURVEY - 2008

## Chapter 8     Smoking



FIRST NATIONS OF QUEBEC AND LABRADOR  
HEALTH AND SOCIAL SERVICES COMMISSION

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The masculine in this document is intended to lighten the text, and without prejudice against women.

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## METHODOLOGICAL NOTE

### *Background*

The First Nations Regional Health Survey (RHS) is a groundbreaking survey in the area of research by and for First Nations. Completely carried out by First Nations, it is an innovative endeavour with respect to the involvement of the communities in the process, ethics and cultural adaptation of research.

The RHS is the first research project to be carried out while completely respecting the principles of ownership, control, access and possession (OCAP). These principles aim to ensure the complete involvement of the First Nations communities in all of the steps of the research.

The governance and coordination of the RHS are ensured by the First Nations Information Governance Centre (FNIGC) at the national level and by the First Nations of Quebec and Labrador Health and Social Services Commission (FNQLHSSC) in Quebec.

This second wave of the RHS was preceded by the wave that took place in 2002 (first wave) as well as by a pilot project (1997). For the past 15 years, the RHS data has contributed to supporting the decision-makers and interveners while contributing to expanding the knowledge on the socio-sanitary situation of the First Nations. We plan on carrying out two phases following this one, which are phase 3 in 2013 and phase 4 in 2016.

1997 Pilot of the RHS	2002 Phase 1 of the RHS	2008 Phase 2 of the RHS	2013 Phase 3 of the RHS	2016 Phase 4 of the RHS
Completed	Completed	Completed		

### *Questionnaire*

Three distinct questionnaires were created for three different age groups (children, youth, adults). These questionnaires were administered in person by 63 First Nations interviewers who were trained for this purpose. In order to prevent the error risks, data entry was performed by the interviewers during the interview using laptop computers. With respect to children less than 12 years of age, the questionnaire was administered to the parent or guardian. The following table summarises the themes addressed according to each age group.

### Themes addressed in the 2008 RHS questionnaires

Themes	Children	Youth	Adults
	0 – 11 years	12 – 17 years	18 years and up
Vaccination	√		
Child care services	√		√
Demographic characteristics	√	√	√
Household characteristics	√	√	√
Education	√	√	√
Language and culture	√	√	√
Chronic diseases	√	√	√
Injuries	√	√	√
Dental care	√	√	√
Diabetes	√	√	√
Physical activity	√	√	√
Nutrition and traditional foods	√	√	√
Indian residential schools	√	√	√
Mental health		√	√
Community well-being		√	√
Smoking		√	√
Alcohol and drugs		√	√
Sexual health		√	√
Access to health care		√	√
Traditional medicine		√	√
Preventive health care			√
Housing			√
Natural caregivers			√
Depression			√
Migration			√
Employment and income			√
Gambling			√
Food security			√
Home care and limitations			√
Violence			√
State of health index			√

A total of 2 691 individual interviews were carried out (87.3% of the sampling that was initially anticipated).

0-11 years: 727 respondents (94.4% of the sampling initially anticipated).

12-17 years: 600 respondents (77.9% of the sampling initially anticipated).

18 years and up: 1 364 respondents (88.6% of the sampling initially anticipated).

### *Data collection period*

The data collection unfolded from September 2008 to February 2010 among the 21 selected communities in the Quebec region.

### *Sampling*

The RHS was carried out using a two-stage stratified sampling.

First stage: Classification of the communities from each nation according to their sizes among one of the following strata: small (between 75 and 299 residents); medium (between 300 and 1499 residents); large (1500 residents and up). The communities required at least 75 residents in order to be eligible. A random selection of the communities was then performed among each of the strata. With the goal of increasing statistical power, all of the large communities were invited to participate in the RHS. In the event that a stratum was represented by a single community of a given nation, it was automatically invited to participate in the survey.

Second stage: Breakdown of the populations of the selected communities according to eight strata established according to age and gender:

Stratum 1: 0-11 years/male;

Stratum 2: 0-11 years/female;

Stratum 3: 12-17 years/male;

Stratum 4: 12-17 years/female;

Stratum 5: 18-54 years/male;

Stratum 6: 18-54 years/female;

Stratum 7: 55 years +/male;

Stratum 8: 55 years +/female.

The individuals in each of the strata were randomly selected. This selection process was carried out using the band lists of each of the participating communities.

The number of respondents in the sampling was sufficient to allow for verifying the statistical significance of the results observed. As can be read among the survey's chapters, for the majority of the results observed, it is possible to apply the result observed in the sampling to the entire population with a margin of error of less than 5% or, depending on the case, less than 1%.

### Communities participating in the 2008 RHS

Nation (8)	Size	Community (21)	Sampling	Population	% of the pop.
Abenaki	Medium	Odanak	50	309	16.2%
Algonquin	Large	Kitigan Zibi	122	1535	7.9%
		Lac Simon	174	1403	12.4%
	Medium	Pikogan	95	567	16.8%
		Timiskaming	86	604	14.2%
		Eagle Village	55	261	21.1%
Atikamekw	Large	Manawan	167	2122	7.9%
		Opitciwan	183	2117	8.6%
	Medium	Wemotaci	118	1307	9.0%
Hurons-Wendat	Medium	Wendake	111	1332	8.3%
Innus	Large	Betsiamites	252	2848	8.8%
		Mashteuiatsh	183	2022	9.1%
		Uashat Mak Mani-Utenam	246	3080	8.0%
	Medium	Matimekush-Lac John	87	729	11.9%
		Natashquan	128	916	14.0%
		Pakua Shipi	50	314	15.9%
	Small	Unamen Shipu	96	1016	9.4%
		Essipit	38	177	21.5%
Mi'gmaqs	Large	Listuguj	220	2000	11.0%
	Medium	Gesgapegiag	72	608	11.8%
Mohawks	Medium	Kanesatake	94	1328	7.1%
Naskapis	Medium	Kawawachikamach	64	614	10.4%
<b>Total</b>			<b>2691</b>	<b>27209</b>	<b>9.9%</b>

## *Weighting*

All of the data presented in the RHS was weighted in order to provide an estimate with respect to the total First Nations population of Quebec living in the communities.

## *Representation limits for the Mohawk Nation*

Even though the Mohawk Nation in Quebec is made up of Kahnawake, Kanesatake and part of Akwesasne, the only community that participated in the RHS is Kanesatake. Regarding the community of Akwesasne, it was excluded from the sampling plan for the Quebec region because of the fact that the majority of its residents reside on the Ontario side of the provincial border. As for the community of Kahnawake where most of the Mohawk population of Quebec resides, it opted not to participate in the RHS. For these reasons, it is impossible to produce estimates that can be applied to the entire Mohawk Nation of Quebec.

## *Geographic zone*

Some of the RHS data is presented according to geographic zone. This refers to the degree of isolation of the respondents' communities. The degree of geographic isolation is based on a zone system developed by Aboriginal Affairs and Northern Development Canada (AANDC).

Zone 1: The community is located less than 50 km from a service centre with year-round road access.

Zone 2: The community is located between 50 km and 350 km from a service centre with year-round road access.

Zone 3: The community is located over 350 km from a service centre with year-round road access.


Zone 4: The community has no year-round road access to a service centre.

Service centre: The nearest location where the community members must go in order to access service providers, banks and governmental services.



## HIGHLIGHTS

- More than half (55.5%) of the participants aged 12 and up indicated that they were smokers at the time of survey (76% are regular smokers, 24% are occasional smokers).
- Women are significantly more likely than men to be regular (43.8% vs. 40%) or occasional smokers (14% vs. 12.2%).
- Adults aged 25-44 have the highest proportion of regular smokers.
- One third of individuals aged 12-14 are smokers, 57.6% of which are regular and 42.4% are occasional smokers.
- Comparing RHS 2008 with RHS 2002, there is a slight but statistically significant decrease in the proportion of smokers among the 15-17 ( $p = 0.002$ ) and 18-24 ( $p = 0.02$ ) age groups. Conversely, there is a slight but statistically significant increase in the proportion of adults aged 45-64 ( $p = 0.01$ ).
- The highest proportions of smokers are found among the Atikamekw (71.1%), Naskapis (63.5%), Innus (59.1%) and Algonquin (53.6%).
- The proportion of smokers reaches its highest point in zone 3 (69.3%) and in zones 2 and 4 (66.7% and 66% respectively).
- Approximately one in three non-smokers is exposed to second-hand smoke.
- Three in four children (75.9%) live in a home where they are exposed to second-hand smoke.
- More than half (52.7%) of women were exposed to second-hand smoke during pregnancy.
- The average age for smoking the first cigarette is 15 years old (CI at 95% [14.73; 15.47]).
- The average age at which women have smoked their first cigarette is slightly but significantly lower than men's ( $p < 0.0001$ ), i.e. 14.5 years old (CI at 95% = [14.1; 14.9]) compared to 15.8 years old (CI at 95% = [15.1; 16.4]).
- The members of First Nations start smoking at an increasingly young age.
- The highest proportion of smokers (57.5%) is found in adults with a household income under \$20,000.
- Adults with a low level of education are more at risk of smoking.
- There are twice as many male (34.1%) as female smokers (17.5%) who said that they have smoked an average of 20 cigarettes or more per day.
- Among regular smokers aged 12-17, 27.7% smoke 10-19 cigarettes per day on average.

- 
- Smokers are significantly about twice as likely as non-smokers to feel some of the time or almost none of the time in balance on all four aspects (physical, affective, psychological and spiritual).
  - There are significantly twice as many smokers who have experienced suicidal thoughts in their lives compared to non-smokers.
  - More than half of pregnant women smoked regularly or occasionally during pregnancy.
  - Among women who said that they have smoked during pregnancy, about 6.5% gave birth to under-weight children (less than 2,500 grams).
  - The prevalence of asthma among children whose mother smoked during pregnancy is significantly higher (17.7%) ( $p = 0.01$ ) than children whose mother did not smoke during pregnancy (10.9%).
  - Among non-smoking men, 25.1% say that they used to be regular smokers before quitting, 18.9% say that they were occasional smokers and 56% say that they have never smoked.
  - Among the reasons for quitting smoking, one in two respondents mentioned a healthier lifestyle (45% of women compared to 53.8% of men).
  - It seems that the majority of non-smoking respondents (80.3%) have chosen the "cold turkey/will power alone" method to quit smoking.

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## INTRODUCTION

Smoking is a major public health issue and one of the first causes of death (1). In fact, many diseases are due to smoking, including myocardial, vascular and chronic pulmonary diseases such as emphysema, lung and other forms of cancer (1). In addition, smoking is a risk factor for type 2 diabetes (2), very common among Aboriginal populations.

Smoking during pregnancy is especially harmful for the foetus (3, 4). In fact, complications include a higher number of perinatal deaths, placental disorders, preterm delivery, intrauterine growth retardation (5), congenital defects such as gastroschisis, sudden infant death syndrome and a higher risk of spontaneous abortion and learning disorders (3). A report by the British Medical Association shows the deleterious effects of smoking on the sexual and reproductive health (6).

Among Inuit and First Nations communities, the prevalence of smoking is twice as high as that in the rest of Canada (7). In Quebec, based on The Regional Survey on the Health of First Nations of Quebec 2002 (RHS 2002), the prevalence of smoking was 55% in 2002. Bad usage of tobacco is a health hazard and impacts life expectancy (8). In 2002, Aboriginal Affairs and Northern Development Canada estimated that men reached 68.9 years old on average, a difference of 7.4 years with other Canadians (9). Women lived until the age of 76.6 years old on average, 5.2 years less than their Canadian counterparts (9). Data on the increasing effects of tobacco on health keep accumulating.

According to First Nations elders, the traditional usage of tobacco is different from its modern usage. Over time, First Nations populations have modified their usage, from a spiritual and ceremonial usage of rather light tobacco at the time of first contacts with Europeans to today's highly addictive usage, for both ceremonial and personal use (10). While some individuals have access to the traditional, sacred tobacco and still use it, the bad usage of tobacco is life-threatening, has an impact on the quality of life and life expectancy of many Inuit and First Nations adults and children (11).

It is therefore important to know the factors behind smoking within First Nations communities in the Quebec region, in order to identify useful actions and implement reduction measures which benefit those communities and lower the risks associated to smoking.

### *Research objectives*

To evaluate the situation of the Quebec region First Nations communities' youths and adults in terms of smoking, it is important to start with a global picture of their tobacco usage. After, current data (2008) needs to be compared with RHS 2002. That way, the evolution of this phenomenon can be monitored for this population.

# TOBACCO USAGE

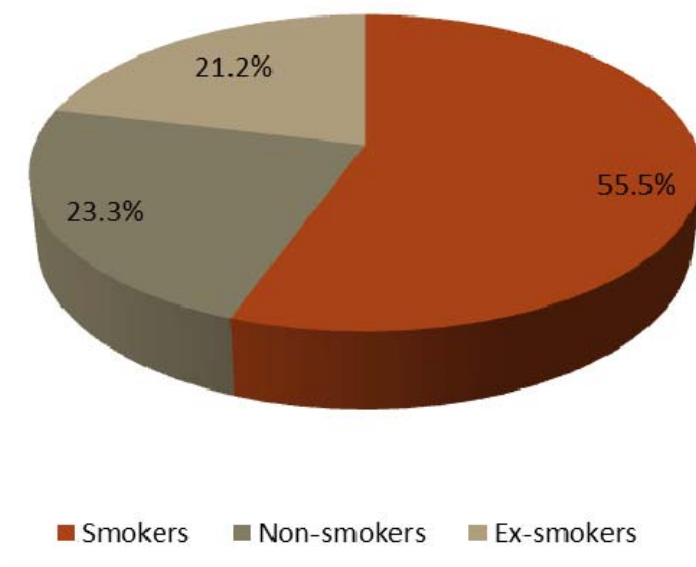
Smoking has been a major public health issue within the Quebec population since 1995 (12). From then, government actions targeting its reduction have multiplied (13) and tobacco usage is closely monitored. However, the situation remains poorly documented for Quebec First Nations.

## 1. GLOBAL PICTURE OF TOBACCO USAGE

### 1.1 Prevalence of smoking

The prevalence of smoking is measured by distributing individuals aged 12 and up based on the type of smoker. Tobacco usage is defined based on three main categories: 1) smokers<sup>1</sup> (regular or occasional), 2) ex-smokers and 3) non-smokers, those who have never smoked.

Figure 1: Distribution of individuals aged 12 and up based on smoking status (N = 22,563)



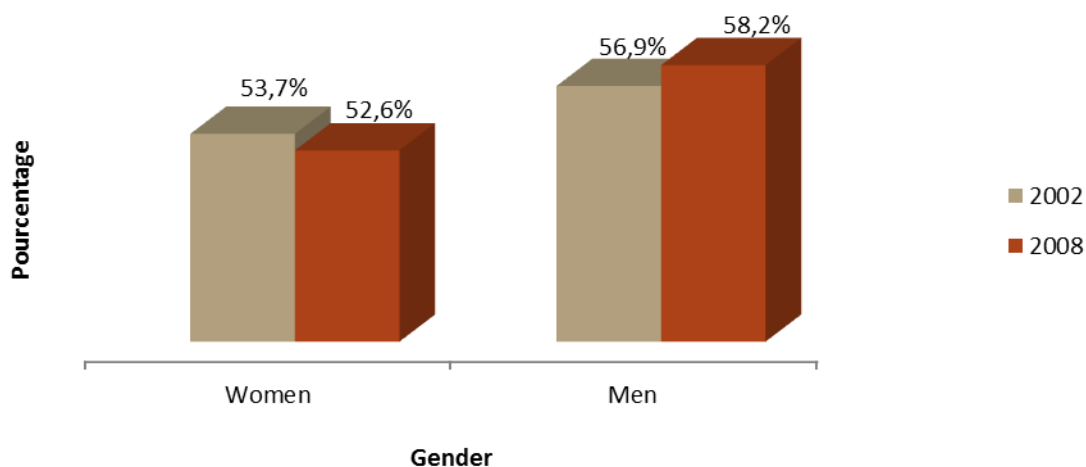
<sup>1</sup> For the purpose of this chapter, the smokers category includes all individuals who say that they smoke daily or occasionally. No distinction is made based on the number of cigarettes smoked every day..

Results from RHS 2008 show that more than half (55.5%) of respondents aged 12 and up say that they were smokers at the time of survey (76% regular, 24% occasional), while about one in five is a non-smoker (21.2%) and nearly one in four individuals has never smoked (23.3%) (Figure 1). This is not statistically different from the 2002 situation. In RHS 2002, the prevalence of smoking among First Nations individuals aged 12 and up was estimated at 55.3% (77.3% of regular smokers, 22.7% of occasional smokers).

### 1.2 Prevalence of tobacco usage based on some socio-demographic factors

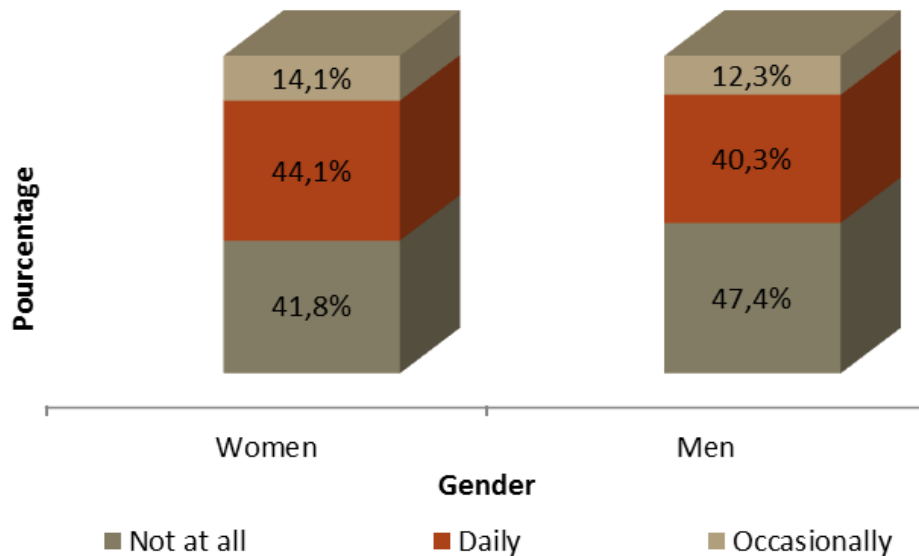
Tobacco usage does not vary in a statistically significant way based on gender. In fact, the proportion of female smokers is 52.6%, compared to 58.2% of men.

Figure 2: Prevalence of tobacco usage among individuals aged 12 and up in 2002 and 2008, based on gender



In addition, regardless of frequency, the proportions of smokers in RHS 2008 are roughly the same than in RHS 2002 (Figure 2). There is no statistically significant difference.

Figure 3: Distribution of individuals aged 12 and up based on smoking status and gender (N = 22,564)



Looking at the tobacco usage habits based on gender, women are more likely than men to be regular (44.1% vs. 40.3%) or occasional smokers (14.1% vs. 12.3%) (Figure 3). However, there are proportionally more men who say that they are non-smokers compared to women (47.4% vs. 41.8%) (Figure 3). That difference is statistically significant ( $p = 0.42$ ).

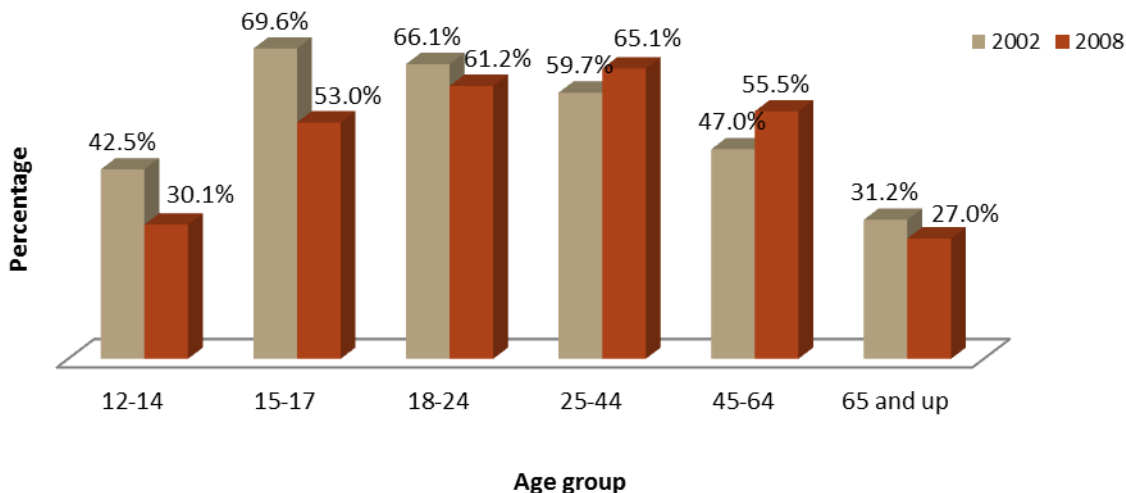
The data based on age shows that adults aged 65 and up have the lowest proportion of smokers (27%), compared to 30.1% for youths aged 12-14, 53% for youths aged 15-17, 61.2% for adults aged 18-24, 65.1% for adults aged 25-44 and 55.5% for adults aged 45-64 (Table 1). Individuals aged 25-44 have the highest proportion of regular smokers (50.4%) compared to other age groups (17.2%, 35.4%, 39.1%, 46% and 23.5% respectively). However, one third of individuals aged 12-14 are smokers (57.6% of which are regular and 42.4% are occasional smokers).

Table 1: Distribution of individuals aged 12 and up based on smoking status and age (N = 22,558)

	Age											
	12-14		15-17		18-24		25-44		45-64		65 and up	
	%	N	%	N	%	N	%	N	%	N	%	N
<b>Non-smokers</b>	69.9	990	47.0	1,047	38.8	1,243	34.9	2,608	44.5	2,883	73.0	1,284
<b>Smokers</b>	30.1	426	53.0	1,182	61.2	1,957	65.1	4,865	55.5	3,598	27.0	475
<b>Total</b>	<b>100.0</b>	<b>1,416</b>	<b>100.0</b>	<b>2,229</b>	<b>100.0</b>	<b>3,200</b>	<b>100.0</b>	<b>7,473</b>	<b>100.0</b>	<b>6,481</b>	<b>100.0</b>	<b>1,759</b>

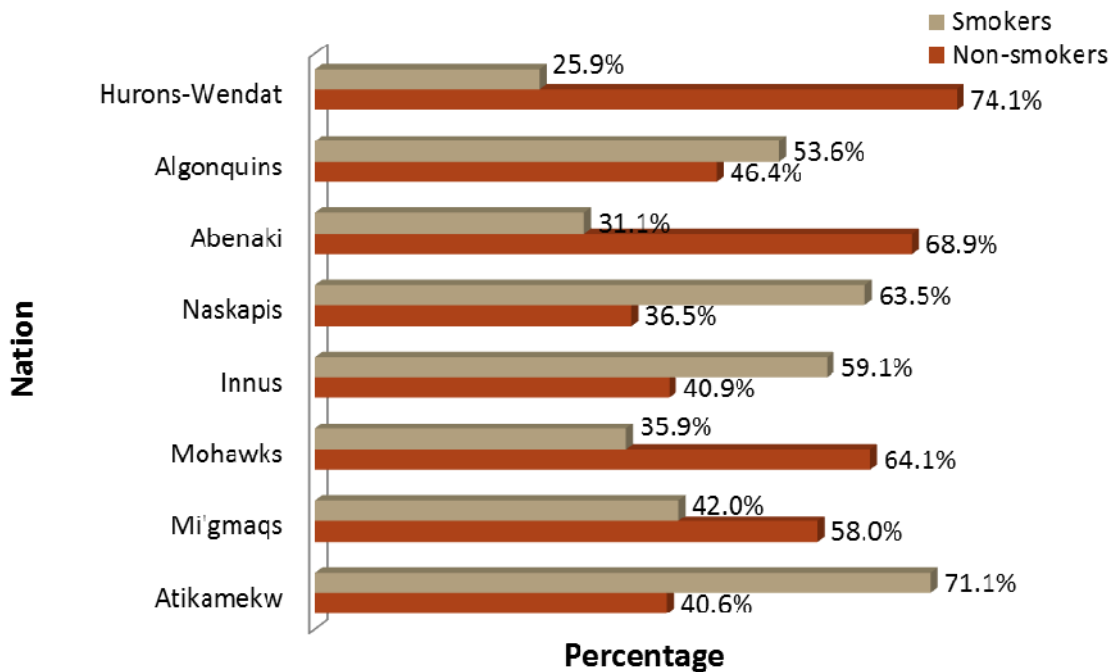
Based on Figure 4 and comparing RHS 2008 with RHS 2002, there is a slight but statistically significant decrease in the proportion of smokers among the 15-17 (p = 0.002) and the 18-24 (p = 0.02) age groups. Conversely, there is a slight but statistically significant increase in the proportion of adults aged 45-64 (p = 0.01). As for the other age groups, the differences are not statistically significant (p = 0.06 for youths aged 12-14, p = 0.07 for adults aged 25-44 and p = 0.6 for adults aged 65 and up).

Figure 4: Prevalence of tobacco usage based on age, individuals aged 12 and up, 2002/2008 comparison



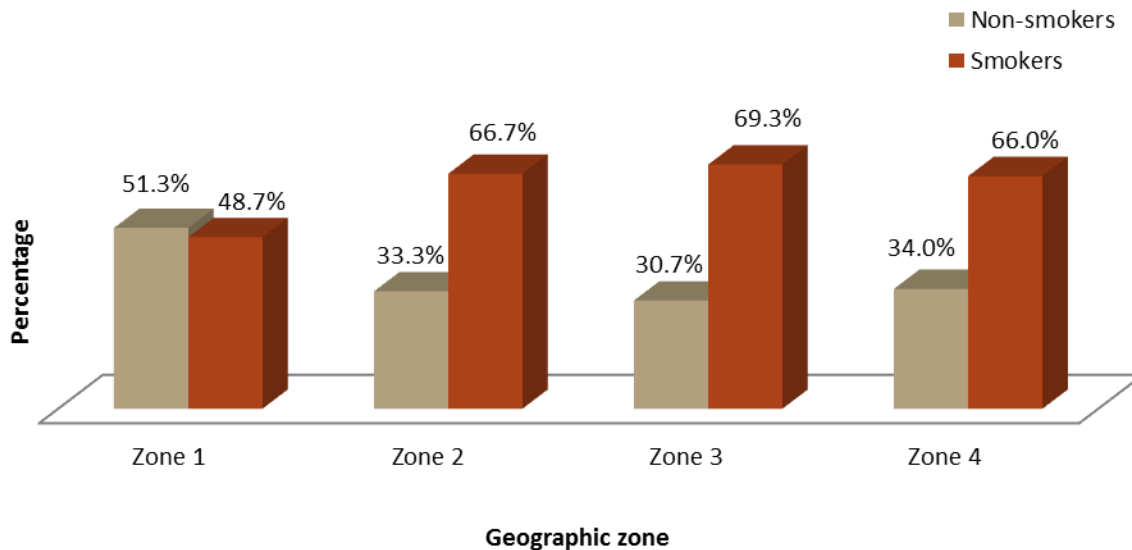
The proportion of smokers (regular and occasional) varies between 25.9% and 71.1% based on nation (Figure 5). The highest proportions of smokers are found among the Atikamekw (71.1%), Naskapis (63.5%), Innus (59.1%) and Algonquin (53.6%). Conversely, the lowest proportions of smokers are found among the Hurons-Wendat (25.9%), Abenaki (31.1%), Mohawks (35.9%) and Mi'gmaqs (42.0%) (Figure 5). From a statistical standpoint, the proportion of smokers is significantly different based on nations (p < 0.0001).

Figure 5: Distribution of individuals aged 12 and up based on smoking status and nation (N = 22,563)



Looking at data based on geographic zones (Figure 6), the proportion of smokers reaches its peak in zone 3 (69.3%) and in zones 2 and 4 (66.7% and 66% respectively), in a statistically significant way ( $p < 0.0001$ ). As for zone 1, the proportion of non-smokers is slightly but significantly higher than that of smokers ( $p < 0.0001$ ).

Figure 6: Distribution of individuals aged 12 and up based on smoking status and geographic zone (N = 22,550)

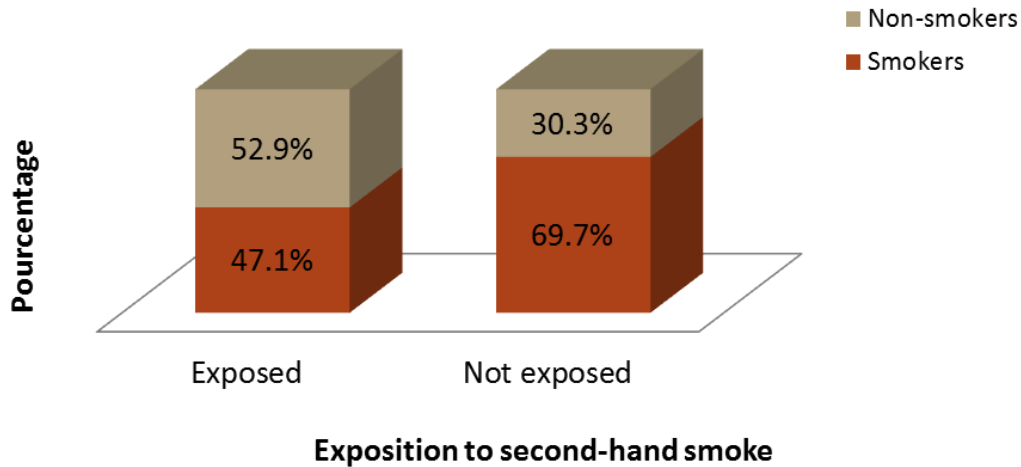


### 1.3 Exposition to second-hand smoke

Second-hand smoke, also known as "passive smoking", is defined by both the smoke coming from the cigarette tip (sidestream smoke) and exhaled by smokers (mainstream smoke), the former being about four times more toxic than the latter (12). Second-hand smoke contains over 7,000 chemicals, at least 250 of which are noxious, including hydrogen cyanide, carbon monoxide and ammonia (13).

Figure 7 shows that nearly one in three non-smokers are exposed to second-hand smoke.

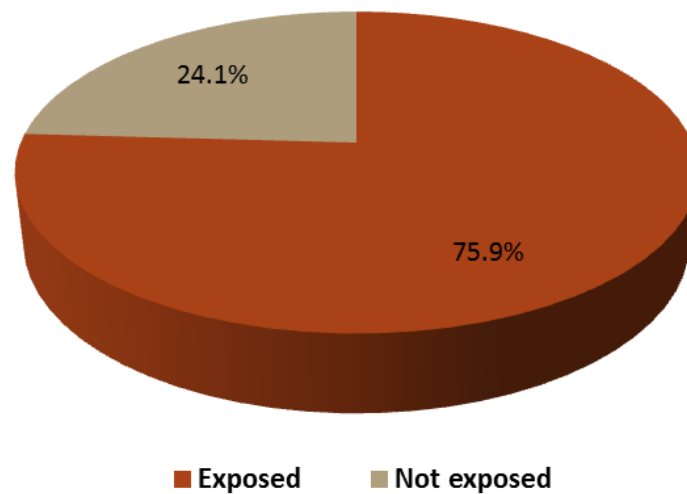
Figure 7: Distribution of individuals aged 12 and up based on smoking status and exposition to second-hand smoke (N = 22,324)



As for children, the results show that three in four children (75.9%) live in a household where they are exposed to second-hand smoke (Figure 8).

In addition, when asked if one or more individuals in their household were smoking during their pregnancy, the majority of mothers participating in RHS 2008 answered yes (52.7%).

Figure 8: Distribution of children aged 0-11 based on exposition to second-hand smoke (N = 6,272)



## 2. PICTURE OF CURRENT SMOKERS

This part focuses on the respondents who said that they were smokers at the time of survey. The RHS 2008 data shows that the average age for smoking the first cigarette is 15 years old (CI at 95% [14.73; 15.47]).

### 2.1 Age of initiation to smoking

Comparing the different age groups (Table 2), it appears that the average age for the first cigarette increases significantly with the age of respondents at the time of survey ( $p < 0.0001$ ). In fact, while the average age for respondents aged 65 and up is 20.8 years old, it decreases to 11.7 years old for respondents aged 12-14. The difference between the 65 and up and 12-14 age groups is approximately 9 years.

Based on the gender of current smokers, the average age at which women have smoked their first cigarette is slightly but significantly lower than men's ( $p < 0.0001$ ), i.e. 14.5 years old (CI at 95% = [14.1; 14.9]) compared to 15.8 years old (CI at 95% = [15.1; 16.4]).

**Table 2: Average age at which current smokers aged 12 and up have smoked their first cigarette, based on the respondents' age (N=12 505)**

Respondents' age	Average initiation age	Standard error
65 and up	20.8 years	1.70
45-64	16.7 years	0.37
25-44	14.8 years	0.28
18-24	13.8 years	0.31
15-17	12.9 years	0.20
12-14	11.7 years	0.25

However, if the difference between the average age of men and women when they had their first cigarette is not great, it increases when comparing the various age groups (Table 3). In fact, while the average age for respondents aged 65 and up is 18 years old, it decreases to 11.3 years old for respondents aged 12-14. Among men, the same trend is at 22.6 years old for respondents aged 65 and up and 12.4 years old for youths aged 12-14. The difference between adults aged 65 and up and youths aged 12-14 is 6.7 years for woman and 10.2 years for men (Table 3).

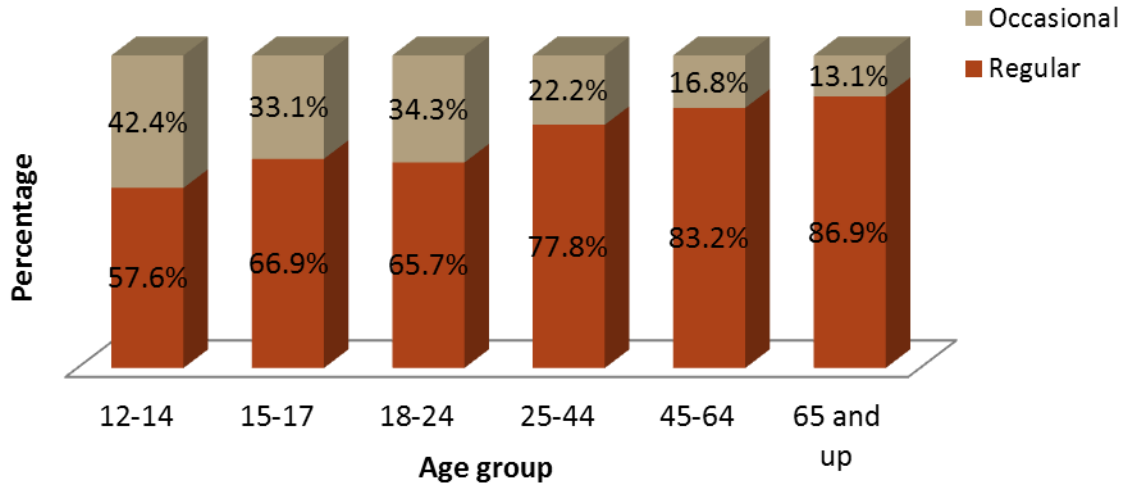
**Table 3: Average age at which current smokers aged 12 and up have smoked their first cigarette, based on gender and age (N=12 505)**

Respondents' age	Women		Men	
	Average initiation age	Standard error	Average initiation age	Standard error
65 and up	18.0 years	1.20	22.6 years	2.75
45-64	16.4 years	0.40	16.9 years	0.49
25-44	14.3 years	0.31	15.4 years	0.51
18-24	13.0 years	0.52	14.5 years	0.50
15-17	12.7 years	0.71	13.0 years	0.33
12-14	11.3 years	1.00	12.4 years	0.21

## 2.2 Smoking habits among current smokers, based on some socio-demographic factors

When it comes to age, the survey data shows that regular smokers are proportionally more frequent among adults aged 65 and up than in other age groups, i.e. 86.9% compared to 57.6% among youths aged 12-14, 66.9% for youths aged 14-17, 65.7% for adults aged 18-24, 77.8% for adults aged 25-44 and 83.2% for adults aged 45-64 (Figure 9). Conversely, it is important to mention that, among young smokers aged 12-14, more than half (57.6%) are regular smokers.

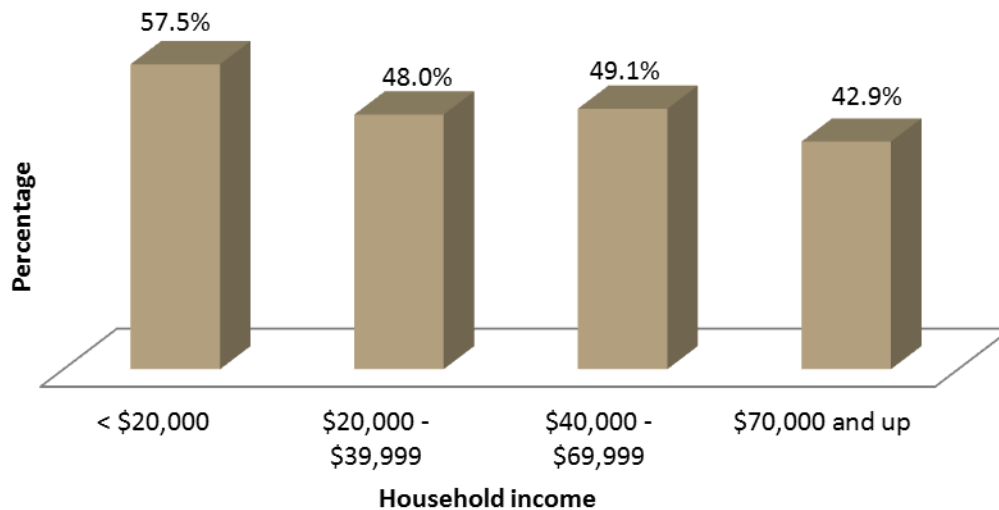
Figure 9: Distribution of smokers aged 12 and up based on smoking habits and age (N = 12,505)



Looking at the proportions of regular or occasional smokers based on gender, there is no statistically significant difference ( $p = 0.75$ ) between women and men (76.6% vs. 75.7% and 23.4% vs. 24.3% respectively).

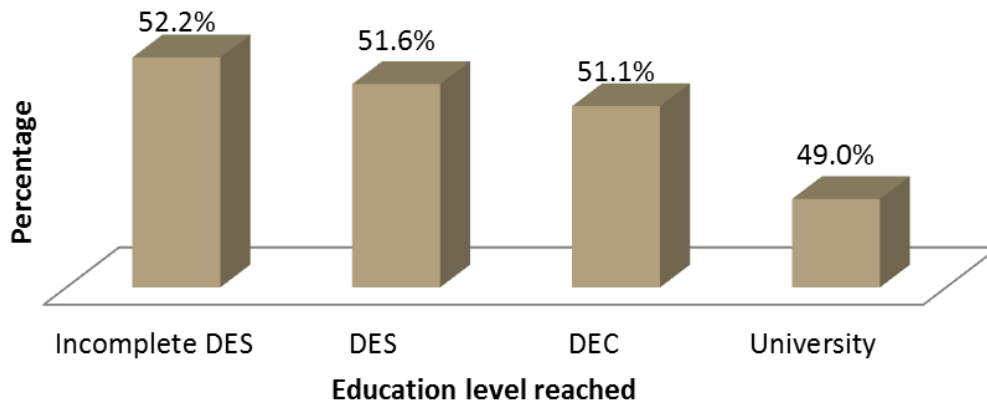
Based on the results shown in Figure 10, the proportion of adult smokers tends to decrease slightly as household income increases, and this in a statistically significant way ( $p = 0.0012$ ). Adults with a household income under \$20,000 have the highest proportion of smokers (57.5%).

Figure 10: Distribution of smokers aged 18 and up based on household income (N = 1,105)



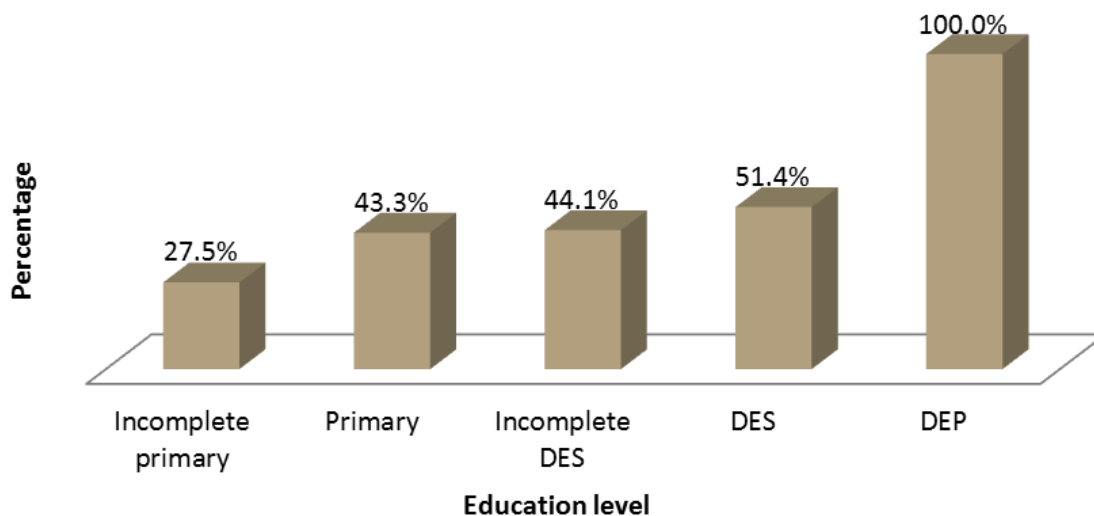
Looking at the results based on education for adults aged 18 and up (Figure 11), tobacco usage decreases slightly as education level increases, and this in a statistically significant way ( $p = 0.005$ ). In fact, the results show that there are considerably more adult smokers among individuals who haven't completed high school, compared with those with higher education.

Figure 11: Proportion of adult smokers based on education (N = 1,297)



The proportion of smokers among youths under 18 increases with education, going from 27.5% for those who have not completed primary school to 100% for those who have a completed professional high-school (Figure 12). However, that trend is not statistically significant ( $p = 0.22$ ).

Figure 12: Proportion of smokers under 18 based on education

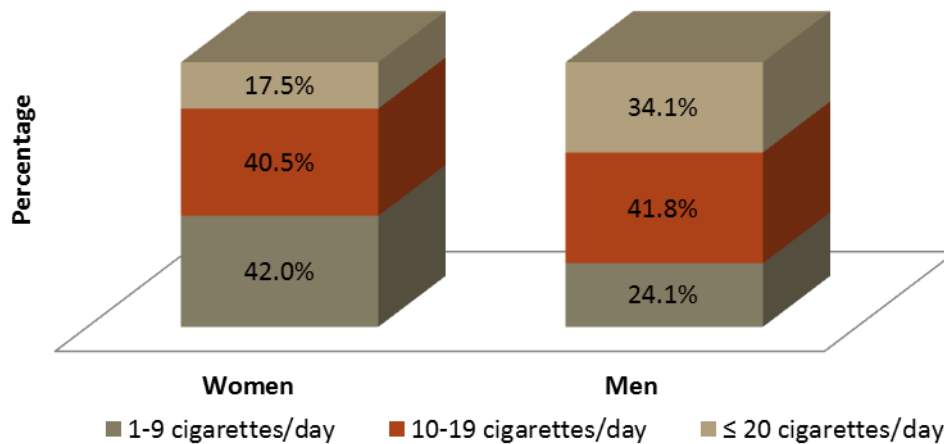


### 2.3 Number of cigarettes smoked

Please note that the number of cigarettes smoked per day is distributed based on the RHS 2002 categories.

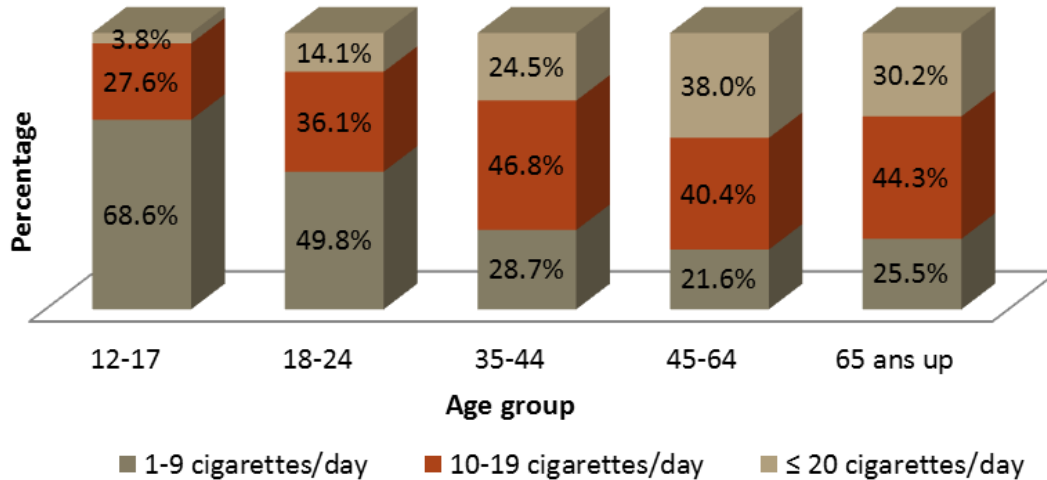
The analysis of Figure 13 data shows that men are different from women when it comes to a very heavy usage of tobacco. There are twice as many male (34.1%) as female smokers (17.5%) who said that they have smoked an average of 20 cigarettes or more per day. However, there are proportionally more women who smoke less than 10 cigarettes per day (42.0% vs. 24.1%).

Figure 13: Distribution of regular smokers aged 12 and up, based on the average number of cigarettes smoked per day and gender (N = 9,447)



When it comes to tobacco usage based on age (Figure 14), the data shows that there are proportionally more smokers regularly consuming 20 or more cigarettes per day among adults aged 45-64 compared to other age groups (38.0% vs. 3.8% for youths aged 12-17, 14.1% for adults aged 18-24, 24.5% for adults aged 25-44 and 30.2% for adults aged 65 and up). Youths aged 12-17 have a higher proportion of regular consumers of 1-9 cigarettes per day (68.6% compared to 49.8%, 28.7%, 21.6% and 25.5% for other age groups, respectively).

Figure 14: Distribution of regular smokers aged 12 and up, based on the average number of cigarettes smoked per day and age (N = 9,443)



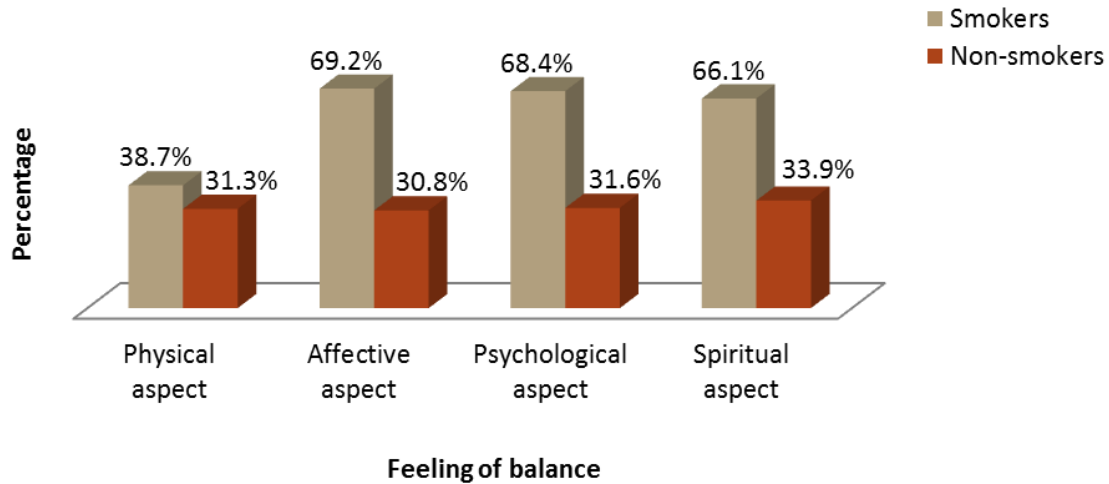
## 2.4 Well-being and smoking

In order to study the data based on the feeling of balance, four essential components were considered:

1. Physical
2. Affective
3. Psychological
4. Spiritual

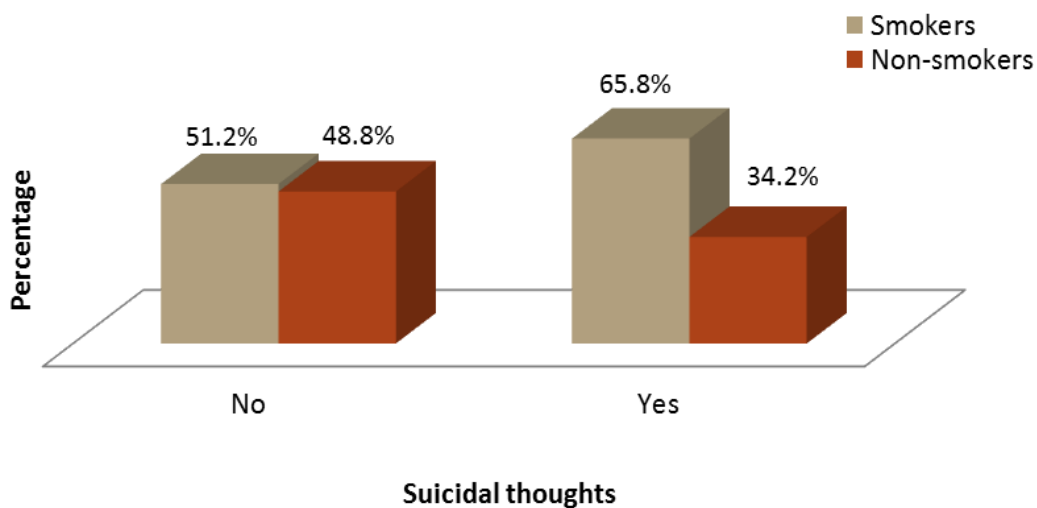
About smoking based on the feeling of balance (Figure 15), the data shows that smokers are about twice as more likely than non-smokers to feel some of the time or almost none of the time in balance on all four aspects. That difference is statistically significant on all four aspects ( $p < 0.0001$ ).

Figure 15: Distribution of respondents aged 12 and up who feel in balance some of the time or almost none of the time, based on smoking status



The analysis of survey data shows a statistically significant relationship ( $p < 0.0001$ ) between the suicide and smoking issues (Figure 16). In fact, among respondents aged 12 and up, those who have already considered suicide in their life are significantly twice as commonly-found among smokers compared to non-smokers.

Figure 16: Proportion of smokers aged 12 and up who have already considered suicide or not in their life (N = 21,848)

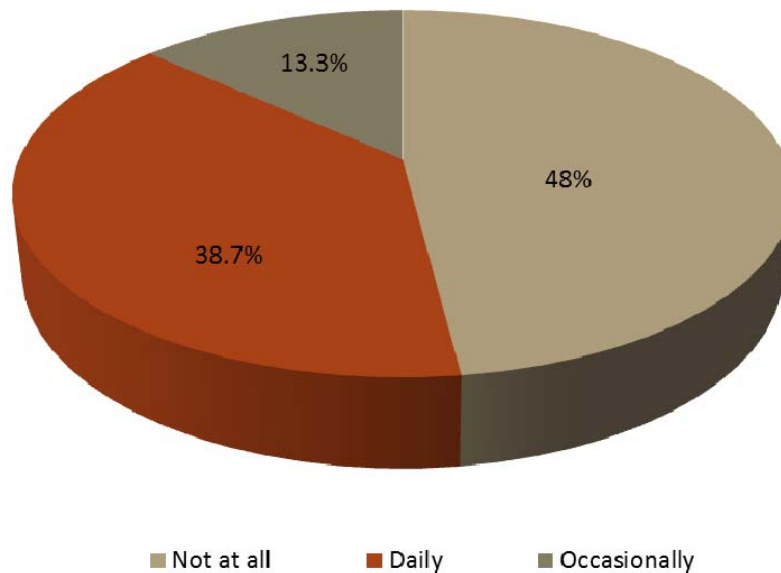


## 2.5 Smoking and pregnancy

Smoking during pregnancy remains a serious public health issue. It is dangerous for both the foetus and the mother. In fact, various studies have established a link between maternal smoking during pregnancy and a series of negative medical impacts. For instance, prenatal maternal smoking is associated to low weight at birth, chronic ischemia, hypoxia, hypertonicity, increase in tremors and amplification of Moro's reflex in newborns (14-17).

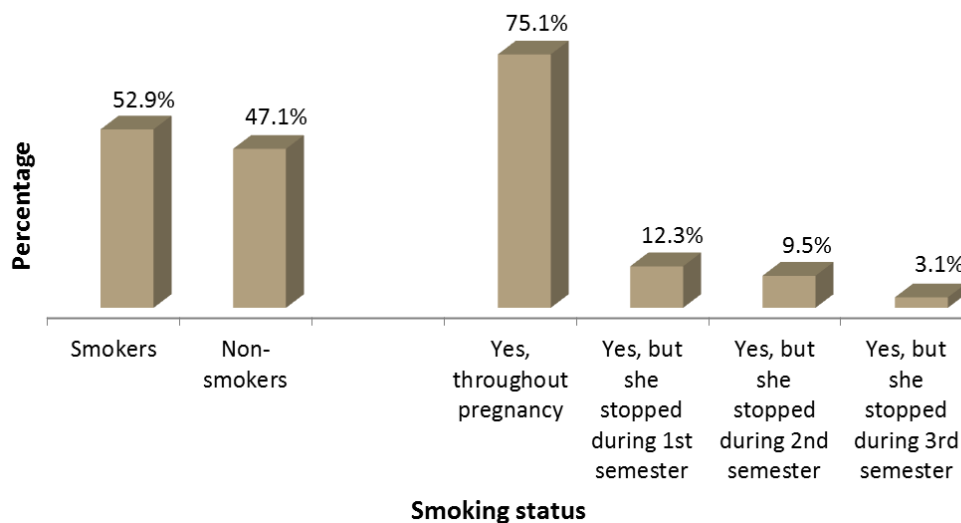
Looking at Figure 17, it is worth mentioning that more than half of women who said that they were pregnant at the time of survey are smoking during pregnancy. Nearly 39% smoke regularly and about 13% smoke occasionally.

**Figure 17: Distribution of women who said that they were pregnant at the time of survey, based on smoking status**



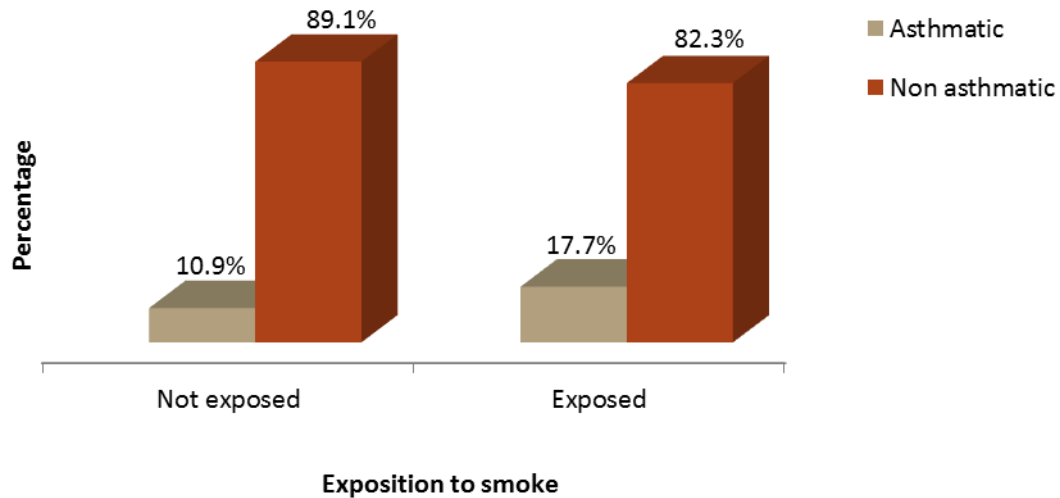
In addition, analysis results (Figure 18) show that half of women (52.9%) say that they have already smoked during pregnancy (52% regularly and 48% occasionally). Among smokers, about 3 out of 4 women (75.1%) say that they have smoked during their entire pregnancy, 12.3% stopped during the third quarter, 9.5% stopped during the second quarter and 3.1% stopped during the first quarter. Among women who said that they have smoked during pregnancy, about 6.5% gave birth to underweight children (less than 2,500 grams). It is also noted that about 24% of those women gave birth to a baby with a weight equal to or lower than 2,700 grams.

Figure 18: Distribution of women based on smoking status during pregnancy (N = 6,107)



Based on the analysis results (Figure 19), the prevalence of asthma among children whose mother smoked during pregnancy is significantly higher (17.7%) ( $p = 0.01$ ) than children whose mother did not smoke during pregnancy (10.9%).

Figure 19: Distribution of children aged 0-11 who were diagnosed with asthma or not, based on exposition to smoke (N = 6,107)



### 3. PICTURE OF CURRENT NON-SMOKERS

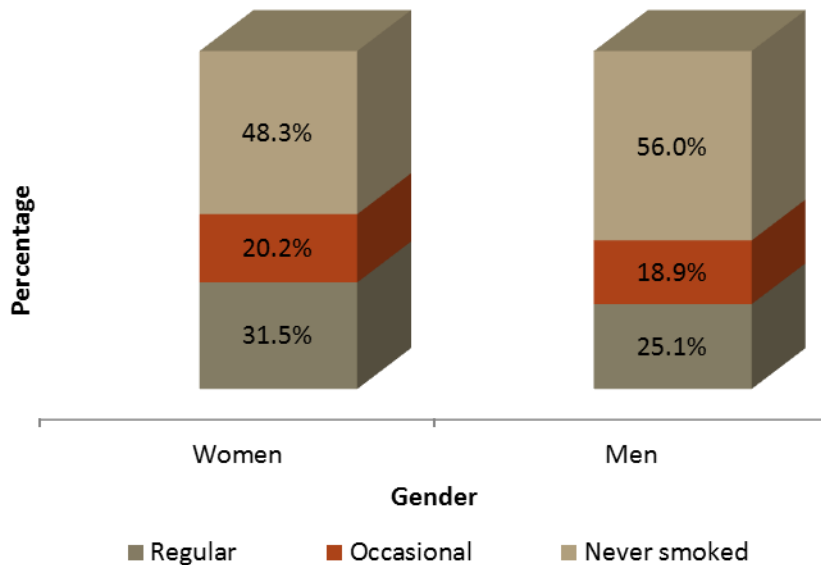
#### 3.1 Current non-smokers tobacco usage habits

About 45% of respondents aged 12 and up said that they are non-smokers; 52.4% of individuals who have never smoked and 47.6% of ex-smokers.

Among non-smoking men, 25.1% say that they used to be regular smokers before quitting, 18.9% say that they were occasional smokers and 56% say that they have never smoked (Figure 20). Among women, 31.5% say that they used to be regular smokers, 20.2% say that they were occasional smokers and 48.3% have never smoked.

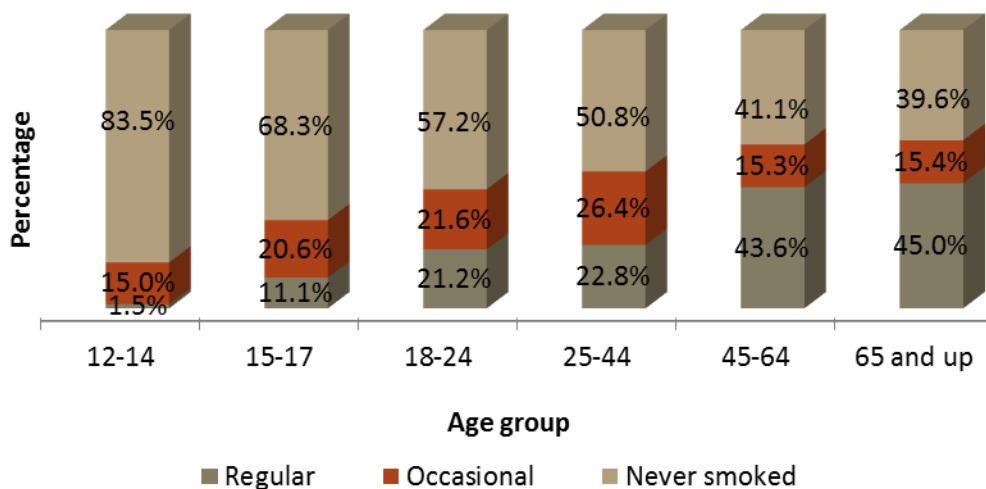
Comparing these results (Figure 20) shows that the percentage of regular or occasional smokers is slightly higher among women compared to men. However, men are more likely than women to have never smoked. However, this is not statistically significant ( $p = 0.08$ ).

Figure 20: Distribution of current non-smokers aged 12 and up, based on status and gender (N = 10,025)



Based on age (Figure 21), adults aged 45-64 and 65 and up are clearly distinct from other age groups, as the proportion of regular ex-smokers is 43.6% and 45% respectively. As for occasional ex-smokers, adults aged 18-24 and 25-44 stand out, with 21.6% and 26.4% respectively.

Figure 21: Distribution of current non-smokers aged 12 and up, based on status and age (N = 10,025)



### 3.2 Average smoking cessation age among ex-smokers

To make an appropriate comparison based on age groups, the Table 4 analysis only includes ex-smokers who said that they quit smoking before turning 18 among adults aged 18-24, 25-44, 45-64 and 65 and up. It is also worth highlighting that, for simplification purposes, youths aged 12-14 and 15-17 are merged into the same category.

Comparing men and women, the average age at which ex-smokers stopped smoking is roughly the same; 14.2 years old (CI at 95% = [13.5; 14.9]) compared to 14.1 years old (CI at 95% = [13.3 ; 14.8]). In fact, there is no statistically significant difference ( $p = 0.7$ ).

The results by age groups show that adults aged 45-64, both men and women, have the youngest average smoking cessation age (Table 4).

**Table 4: Average smoking cessation age for non-smokers aged 12 and up, based on gender and age (N = 851)**

Respondents' age	Women		Men	
	Average cessation age	Standard error	Average cessation age	Standard error
65 and up	14.3 years	2.54	-	-
45-64	11.2 years	1.66	12.1 years	1.41
25-44	15.4 years	0.84	14.6 years	0.61
18-24	15.3 years	0.70	16.7 years	0.73
12-17	13.7 years	0.43	13.0 years	0.46

### 3.3 Reasons for smoking cessation

It is important to determine the reasons why non-smoking respondents have stopped smoking. This will help focus prevention and awareness programs and actions.

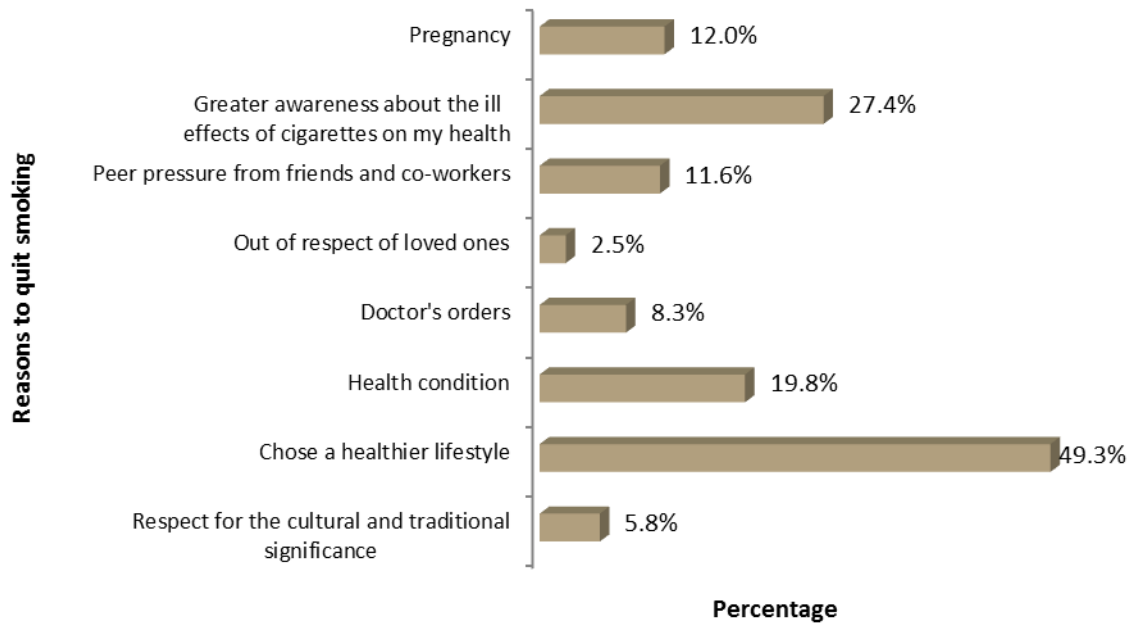
Looking at the reasons for which ex-smokers have stopped smoking (Figure 22), there is a predominating reason in one in two respondents: a healthier lifestyle (45% of women and 53.8% of men).

It is followed by two other reasons:

- Awareness of the ill effects of cigarettes on their health (27.4%)
  - 25% of women
  - 30% of men

- Health condition  
21.4% of women  
18.1% of men

Figure 22 : Reasons to quit smoking among ex-smokers aged 12 and up (N = 6,573)

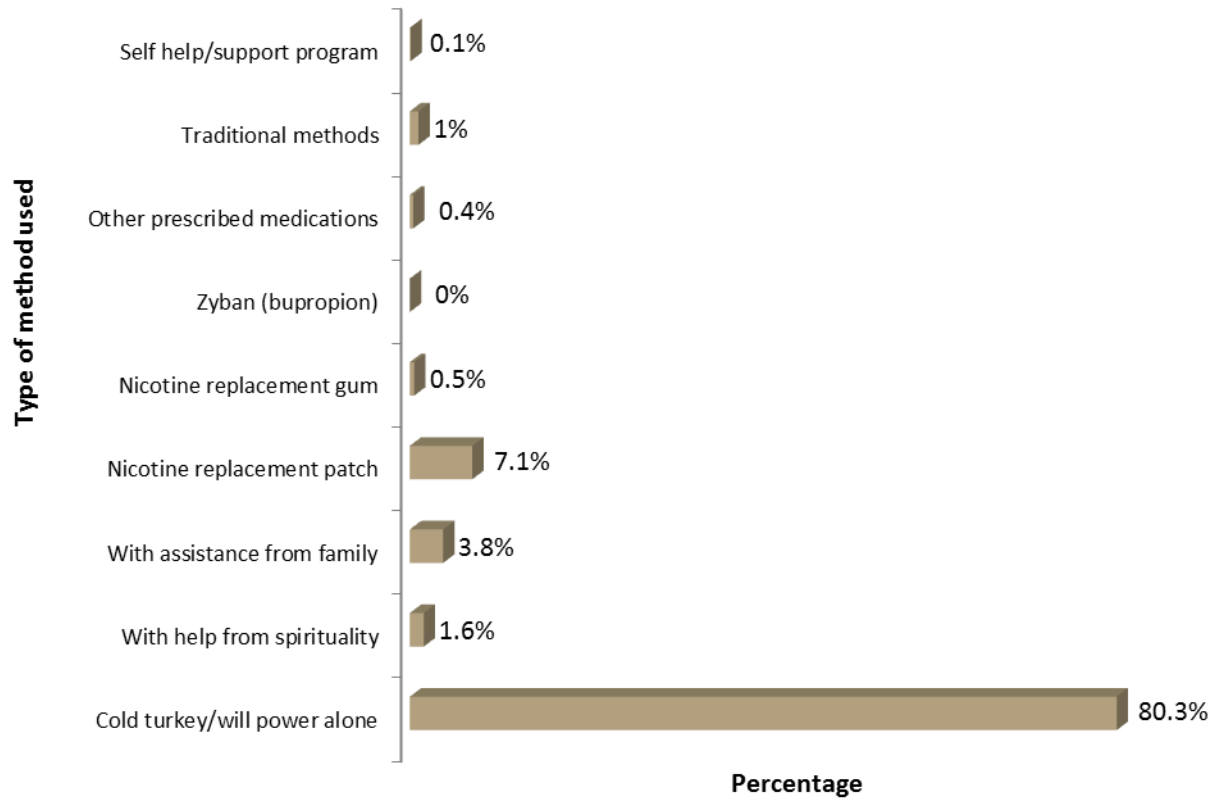


### 3.4 Methods used to quit smoking

There are many ways to quit smoking or facilitate the healing from that addiction. Some prefer stopping all of a sudden (cold turkey), others would rather decrease gradually and others prefer to seek medical or psychological assistance.

Looking at the results in Figure 23, it seems that the majority (80.3%) of ex-smokers relied on "cold turkey/will power alone" to quit smoking. However, it is worth mentioning that 7.1% (6.9% of women and 7.3% of men) chose the nicotine patch, and 3.8% (2.6% of women and 5.1% of men) relied on family assistance to quit smoking.

Figure 23: Methods used by ex-smokers aged 12 and up to quit smoking (N = 4,805)



## DISCUSSION


While the ill effects of smoking are well known, in 2008, the *Regional Survey on the Health of First Nations* (RHS 2008) shows that more than half (55.4%) of the respondents aged 12 and up say that they are current smokers (76% regular and 24% occasional). Based on the data of the 2008 Canadian Community Health Survey (CCHS), the proportion of smokers within the Quebec population aged 12 and up was 23.3%. In other words, Quebec First Nations have, proportionally, twice as many smokers compared to the rest of the province's population.

In addition, looking at the various age groups, the survey data shows that Quebec First Nations tend to start smoking at an increasingly young age ( $p < 0.0001$ ). In fact, while the respondents aged 65 and up started smoking at 20.8 years old on average, the respondents aged 12-14 started smoking at an average of 11.7 years old. The difference between the 65 and up and 12-14 age groups is approximately 9 years. Among regular smokers aged 12-17, 27.7% smoke 10-19 cigarettes per day on average. This early start could expose youths to a greater risk of developing potentially lethal diseases. In addition, the age of the first cigarette could be a major factor in the evolution of tobacco addiction (18). However, comparing with the RHS 2002 data, a slight but statistically significant decrease is observed for the 15-24 age group.

Individuals with a low household income are also more at risk of smoking compared with those with a higher income. In fact, the highest proportion of smokers (57.5%) is found in adults with a household income under \$20,000. Smoking is considered as a poverty factor (19). Indeed, the money spent on tobacco could have been spent on fundamental needs, such as food, housing, education and health care (19). In addition, smokers are much more likely to become ill and to die prematurely from a tobacco-related illness, keeping their family from an essential income and burdening them with additional medical expenses (19). They could therefore make their family's poverty situation even worse (19). As for education, a low level of education is associated to a higher proportion of smokers among adults.

When it comes to wellness, the results show that smokers are about twice as more likely than non-smokers to feel some of the time or almost none of the time in balance on all four aspects. There are significantly twice as many smokers who have experienced suicidal thoughts in their lives compared to non-smokers. The National Epidemiologic Survey on Alcohol and Related Conditions did a study on the relationship between smoking and suicidal behaviour among 34,653 smokers (20). It showed that smoking is a suicide risk factor. However, smoking cessation seems to help reduce that risk greatly.

In addition to the above-mentioned risks, the analysis showed that more than half of pregnant women smoked during pregnancy. Smoking during pregnancy poses specific risks. In fact, various studies have established a link between maternal smoking during pregnancy and a series of negative medical impacts. They include low weight at birth, chronic ischemia, hypoxia, hypertonicity, increase in tremors and amplification of Moro's reflex in newborns (14-17). The results show that, among women who said that they were smoking during pregnancy, about 6.5% gave birth to children with low weight (less than 2,500 grams) and 17.7% had children with asthma. As for second-hand smoke, three in four children (75.9%) live in a home where they are exposed to it. In addition, nearly half (52.7%) of women were exposed to second-hand smoke during pregnancy.



The results also show that the highest proportions of smokers are found in zone 3 (69.3%) and in zones 2 and 4 (66.7% and 66% respectively). This might lead to believe that geographic isolation could be a tobacco risk factor.

## CONCLUSION


For many First Nations populations, tobacco has been traditionally used for thousands of years during ceremonies, rituals and prayer. The high prevalence of smoking among First Nations has often been associated to that traditional use. Yet, based on the results, it is clear that many other factors are associated to smoking. It is therefore important to take them into account to develop an efficient smoking cessation campaign. In other words, strategies need to rely on facts and be culturally adapted to reduce smoking and improve the health of the Quebec region First Nations. In fact, the *Quebec First Nations Health And Social Services Blueprint, 2007-2017: Closing the gaps... Accelerating change* features recommendations to that effect.

Strategies must rely on four mutually-reinforcing elements: protection, prevention, renunciation and reduction of impacts. An awareness and outreach campaign shall also be developed on the reduction of smoking and passive smoking, as well as the impacts of passive smoking on foetus, babies and young children. That campaign would aim at raising awareness and motivate First Nations to participate in existing efforts against smoking, especially among youths.



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