

The Elasticity of Demand for Cigarettes in Canada.

Elasticity of demand is a calculation used by economists to measure the change in quantity of a good purchased in response to the change in its price. It is generally calculated as the *percentage change in quantity purchased divided by the percentage change in price*.

This concept is frequently applied to tobacco products (usually cigarettes) by considering the elasticity of consumption (the change in the amount of smoked) and elasticity of participation (the change in the number of people who smoke or who smoke daily). Elasticity measures are taken for changes in market prices for cigarettes and tax elasticity is also calculated for the changes that result from increased or decreased taxation. The elasticity of demand can be calculated for the entire population, and also for sub-groups (like women, low income, teenagers, etc). It can be calculated on the basis of short-run and long-run effects. A number of methods have been developed to estimate the elasticity of demand for tobacco products. ¹

Major studies in the late 1990s concluded that in high income countries, the overall price elasticity of cigarettes in high income countries was about -0.4, meaning that a 10% increase in price would result in a 4% decrease in consumption. A higher impact was generally found for young people, and some studies found that women were more likely to reduce consumption in response to price increases and some found they were not.

Estimates of elasticity of demand for cigarettes in Canada published since 2000 are summarized in the tables below.

1 For further information on these concepts, see U.S. National Cancer Institute and World Health Organization. The Economics of Tobacco and Tobacco Control. National Cancer Institute Tobacco Control Monograph 21, Chapter 4.

Table 1: Summary of findings

Study	Time and Data source		Population	Measure	Elasticity
Stephens, 2001	1994 to 1995 National Populatiaon Health Survey	Price Elasticity	Men (12+)	Participation	-0.5
			Women (12+)	Participation	-0.3
Reinhardt, 2001	1990-1998 Statistics Canada CANSIM	Price elasticity	All population	Consumption	-0.617
			Income elasticity	Consumption	0.193
Dupont, 2002	1994-1998 National Population Health Survey (NPHS)	Price elasticity	Age 14-18	Participation	-0.914
Gruber, 2002	1994-1999 Legal sales of cigarettes, Canadian Survey of Family Expenditure	Price elasticity	All population	Consumption	-0.45
				Participation	No effect
			• Income Quartile 1	Consumption	-0.99
			• Income Quartile 2	Consumption	-0.45
			• Income Quartile 4	Consumption	-0.31
			• Income Quartile 5	Consumption	-0.36
Gospodinov, 2004	2000-2001 CTUMS, CANSIM Canadian Tobacco Use Monitoring Survey	Price elasticity	Ages 15 +	Participation	-0.58
			Ages 15-19	Participation	-0.39
			Ages 20-64	Participation	-0.49
			Ages 65+	Participation	-1.07
			Ages 15 +	Consumption	-0.57
Gospodinov, 2005	2000-2001 Statistics Canada (CANSIM)	Price elasticity	All population	Cons. short run	-0.1
				Cons. long run	-0.3
Zhang, 2006	1994-95 to 1996-97 National Population Health Survey	Price elasticity	Ages 20-24	Initiation	-3.36
Diener, 2007	2002 to 2005 Sales data	Tax elasticity	All population, all cigarettes	Consumption	-0.54
			Regular cigarettes	Consumption	-0.91
			Discount cigarettes	Consumption	1.37
Gospodinov, 2007	1999-2002 CTUMS, Statistics Canada	Price elasticity	All ages,	Consumption	-0.540
			• Low income	Consumption	-0.274
			• Low-middle income	Consumption	-0.647
			• Middle income	Consumption	-0.392
			• Middle-high income	Consumption	-0.632
			• High income	Consumption	-0.792
			Ages 15-19,	Consumption	-0.581
			• Low income	Consumption	-0.749
			• Low-middle income	Consumption	-0.640
			• Middle income	Consumption	-0.732
			• Middle-high income	Consumption	-0.924
			• High income	Consumption	-0.460
Sen, 2010a	1994-1999 GSS (1991); YSS	Tax elasticity	Youth (15-19)	Participation	-0.10
				Daily smoking	-0.14

Study	Time and Data source		Population	Measure	Elasticity
	(1994), NPHS (1996-1999), CTUMS (1999), WSPP. 1994-1999			Initiation	-0.2
				Persistence	-0.5
Sen, 2010b	2003 and 2005 Canadian Community Health Survey	Tax elasticity	All population	Daily smoking	-0.111 to - 0.464
Azagba, 2011	1998 - 2009 NPHS, longitudinal 1998/99-2008/09	Tax elasticity	12 to 65 year olds	Participation	-0.23.
			• Male	Participation	-0.3216
			• Female	Participation	-0.1198
			• Low income	Participation	-0.1829
			• High income	Participation	-0.2017
			• Low health status	Participation	-0.1913
			• High health status	Participation	-0.3168
			• Less secondary	Participation	-0.5549
			• Secondary	Participation	-0.2179
			• Some post secondary	Participation	-0.0182
			• Post secondary	Participation	-0.0422
			12 to 24	Participation	-0.1217
			25 – 44	Participation	-0.1139
			45-65	Participation	-0.2404
			18-40	Participation	-0.0153
			41 to 65	Participation	-0.2955
Sen, 2011	1991-1999 GSS (1991); YSS (1994), NPHS (1996-1999),		Males	Daily smoking	-0.10 to -0.14
			• Males 14-19	Daily smoking	-0.54 to -0.58
			• Males 20-34	Daily smoking	-0.099
			• Males 35-44	Daily smoking	0.01
			• Males 45 – 54	Daily smoking	-0.34 to -0.38
			Females	Daily smoking	0.02 to 0.15
			• Females 14 to 19	Daily smoking	0.11 to 0.13
			• Females 20-34	Daily smoking	0.22
			• Females 35-44	Daily smoking	-0.03 to - 0.035
			• Females 45-54	Daily smoking	0.26 to 0.28
Matheson, 2015	1991 - 2001 Aboriginal Peoples Survey	Community smoking rates	First Nations Reserves	Participation	-0.47
				Daily smoking	-0.79
		Price Elasticity	First Nations Reserves	Participation	-0.126
				Daily smoking	-0.091
				Occasional smoking	-0.124
				Cigarettes per day	-1.526
Manivong, 2017	2002-2011 Canadian Tobacco Use Monitoring Survey (CTUMS)	Tax elasticity	Age 15 to 18	Participation	0.2%
			• Female, age 15 to 18	Participation	-0.4%
			• Male, age 15 to 18	Participation	1.1%
CUI, 2019	2012-2013 YSS 2012/2013 YSS	Price Elasticity	Grades 6 to 12	Initiation	-1.13
			Grades 10 to 12	Initiation	-0.82
			Grades 7 to 9	Initiation	-1.57

Table 2: List of studies, including abstracts

Study	Publication notes
<p>Stephens, 2001</p>	<p>Comprehensive tobacco control policies and the smoking behaviour of Canadian adults Tobacco Control 2001;10:317-322. Thomas Stephens, Linda L. Pederson, John J. Koval, Jennifer Macnab Abstract OBJECTIVE To examine the associations of cigarette prices, restrictions on public smoking, and health education with the odds of adult smoking and amount smoked daily. DESIGN Multi-level analysis of adult (age 25+) smoking patterns in Canada's National Population Health Survey, after adding administrative data on prices, bylaws, and health education according to the survey respondent's place of residence. SETTING/SUBJECTS Population based sample of Canadians age 25+ in households (n = 14 355). OUTCOME MEASURES Smoking status, amount consumed daily. ANALYSIS Logistic regression for smoking status, multiple regression for amount smoked, with controls for age, education, marital status; separate analyses for men and women. RESULTS Cigarette prices were positively associated with the odds of being a non-smoker and negatively with amount smoked, for adults of both sexes. Per capita health education expenditures were positively associated with the odds of being a non-smoker and negatively with amount smoked—for men but not women. The restrictiveness of municipal bylaws limiting public smoking was positively associated with the odds of being a non-smoker and negatively with amount smoked—for women but not men. These results are independent of age, education, and marital status. CONCLUSIONS To be effective, tobacco control must comprise a mix of strategies as men and women respond differently to health education and restrictions on public smoking; taxation, reflected in higher cigarette prices, is the only one of these measures related to smoking for both sexes. This model permits calculations of the level of increase in each measure that is required to reduce the prevalence of smoking by a specified amount.</p>
<p>Reinhardt, 2001</p>	<p>Are Cigarette Bans Really Good Economic Policy? Frank Reinhardt and David Giles Applied Economics, 33 (11): 1365-68 Abstract: We investigate the quarterly relationship between the quantity of cigarettes sold, real disposable income per capita, and the relative price level of cigarettes in Canada. Careful attention is paid to the non-stationarity of the data and the dynamic specification of the model. We conclude that cigarette demand is extremely insensitive to price and income changes. This is evidence of the large consumer surplus smokers enjoy and the large revenue increasing potential of a cigarette tax increase policy, as opposed to cigarette bans.</p>
<p>Dupont, 2002</p>	<p>The Economic Impacts of Cigarette Tax Reductions on Youth Smoking in Canada Diane P. Dupont and Anthony J. Ward Brock University, December 2020 Cigarettes are the most commonly consumed recreational chemicals used by Canadians. The current smoking rates (using 1999 data) are 33.7 % for young adults (20- 24 years of age) and 28.1 % for youth (aged 15 to 19). These numbers for younger persons are particularly alarming to health officials and policy makers since most smokers begin smoking in their youth with a “single puff”. As is well documented, cigarette consumption is linked with premature death and supplemental morbidity effects that put increased stresses upon the provision of health care in Canada. Health officials need to know what tools are particularly useful in discouraging youth from taking up smoking in the first place. This paper estimates smoking demand models for Canadian youth and young adults using the National Population Health Data (NPHS) data from over the period of 1994-1998. The data span a five year period starting after the introduction of very large tax cuts to stem a big increase in the smuggling of illegal cigarettes into Canada from the United States. Since the initial tax cuts, taxes have crept up gradually. In spite of these increases real cigarette prices in 1998 were still less than they were in 1994 for more than half of the Canadian population. Using the NPHS data we calculate a participation elasticity of -0.914 for youth aged 14 to 18. This suggests that a 1 % decrease in the price of cigarettes would increase the number of daily smokers in this age group by 0.9 %. Thus, the tax cuts almost certainly led to increases in both the number of daily youth smokers and also to increases in the numbers of young people who begin smoking at earlier ages.</p>

Study	Publication notes
<p>Gruber, 2002</p>	<p>Estimating Price Elasticities When there is Smuggling: The Sensitivity of Smoking to Price in Canada</p> <p>Jonathan Gruber, Anindya Sen, Mark Stabile National Bureau of Economic Research, Working Paper 8962, 2002</p> <p>Abstract: A central parameter for evaluating tax policies is the price elasticity of demand for cigarettes. But in many countries this parameter is difficult to estimate reliably due to widespread smuggling, which significantly biases estimates using legal sales data. An excellent example is Canada, where widespread smuggling in the early 1990s, in response to large tax increases, biases upwards the response of legal cigarette sales to price. We surmount this problem through two approaches: excluding the provinces and years where smuggling was greatest; and using household level expenditure data on smoking, where there is a downward bias to estimated elasticities from smuggling. These two approaches yield a tightly estimated elasticity in the range of -0.45 to -0.47. We also show that the sensitivity of smoking to price is much larger among lower income Canadians. In the context of recent behavioral models of smoking, whereby higher taxes reduce unwanted smoking among price sensitive populations, this finding suggests that cigarette taxes may not be as regressive as previously suggested. Finally, we show that price increases on cigarettes do not increase, and may actually decrease, consumption of alcohol; as a result, smuggling of cigarettes may have raised consumption of alcohol as well.</p>
<p>Gospodinov, 2004</p>	<p>Global Health Warnings on Tobacco Packaging: Evidence from the Canadian Experiment</p> <p>Nikolay Gospodinov, Ian Irvine Topics in Economic Analysis & Policy, Volume 4, Issue 1.</p> <p>New health warnings on tobacco packaging in Canada became mandatory in January 2001. As of that time producers were required to print large-font warning text and graphic images describing the health consequences of using tobacco. This study uses micro data from two waves of Health Canada's Canadian Tobacco Use Monitoring Surveys bordering the legislation to investigate if the introduction of the warnings had any significant impacts on smokers. The recently drafted Framework Convention on Tobacco Control, under the sponsorship of the World Health Assembly, assigns a central role for this type of message. Our findings indicate that the warnings have not had a discernible impact on smoking prevalence. The evidence of their impact on quantity smoked is positive, though only at a relatively low level of confidence.</p>
<p>Gospodinov, 2005</p>	<p>A "long march" perspective on tobacco use in Canada</p> <p>Nikolay Gospodinov, Ian Irvine Canadian Journal of Economics. Vol. 39, Issue 2, pp. 366-393</p> <p>Abstract. In this paper we present a model of tobacco demand in Canada, with a view to establishing if price and tax policy on the one hand or educational, regulatory, and demographic influences on the other have been primarily responsible for the substantial drop in consumption since 1980. We address some methodological and econometric issues that have escaped the attention of some analysts to this point. Using data for the period 1972–2000, we find that non-price developments have had a strong deterrent effect and that the price elasticity of demand is now lower than even the recently obtained low estimates propose. These findings have strong public policy content.</p>

Study	Publication notes
Zhang, 2006	<p>The Impact of Tobacco Tax Cuts on Smoking Initiation Among Canadian Young Adults Bo Zhang, MPH, Joanna Cohen, PhD, Roberta Ferrence, PhD, Jürgen Rehm, PhD Am J Prev Med 2006;30(6):474–479</p> <p>Background: Although the majority of smokers initiate smoking during their teenage years, significant rates of initiation occur among young adults. Adolescents are more price sensitive than adults, but little is known about the impact of tobacco taxation on smoking initiation among young adults. Using a longitudinal design, this study examined the impact of decreased cigarette price, resulting from tobacco tax cuts, on smoking initiation among Canadian young adults aged 20 to 24 years.</p> <p>Methods: Using Statistics Canada’s National Population Health Survey longitudinal file, this study examined young adults who did not smoke at baseline in 1994–1995 (n 1636, representing over 1 million young adults) and who were reassessed at follow-up (1996–1997). Multivariable logistic regression analysis using bootstrap weights was conducted to estimate the impact of decreased cigarette price on smoking initiation. The analysis controlled for the potential confounding effect of sociodemographic and tobacco control variables. Sensitivity analyses were conducted. Price elasticity was estimated. Analyses were conducted in 2003 and 2004.</p> <p>Results: Approximately 10% of young adults had initiated smoking at follow-up. Decreased cigarette price was significantly associated with higher smoking initiation (adjusted odds ratio per \$1 decrease for a carton of cigarettes 1.15, 95% confidence interval [CI] 1.01– 1.32, p 0.042). Sensitivity analyses showed similar results. Price elasticity was 3.36 (95% CI 0.07– 6.75).</p> <p>Conclusions: Young adults are sensitive to cigarette prices. Reductions in cigarette prices will lead to increased smoking initiation among this group. Tobacco taxation should be an effective strategy to reduce smoking initiation among young adults.</p>
Diener, 2007.	<p>Examining the Effects of Tax Increases on Discount and Premium Cigarettes in Canada, 2001-2005 iHEA 2007 6th World Congress: Explorations in Health Economics Paper Alan diener, Rashid Ahmed, Murray Kaiserman, Mike Farnworth.</p> <p>Abstract:</p> <p>Rationale: Tax policy has been used as an instrument of health for many years. Since the late 1970's increased excise taxes and duties, at federal and provincial/territorial levels, have resulted in decreased demand and lower cigarette sales in Canada. Nevertheless, in recent years, Canadian cigarette manufacturers have introduced lower priced cigarette brands, known as discount brands, in response to a number of factors. The market share of discount cigarettes increased from 2% to over 40% between 2002 and 2005. This suggests that the magnitude of the effects of tax increases may not be as large as predicted by the literature.</p> <p>Objective: The objective of this paper is to determine the effect of tax changes on the overall demand for cigarettes, as well as the separate effects on discount and premium cigarettes.</p> <p>Methods: The data employed in this paper include monthly wholesale cigarette sales and prices, by brand, for each Canadian province, federal and provincial taxes per carton of cigarettes, and per-capita disposable income for 2002 to 2005. Three separate models were estimated - one model for overall cigarette sales, and separate models for discount and premium cigarette sales. Monthly cigarette sales were used as the dependant variable in each model with discount and premium cigarette prices, cigarette taxes, and disposable income as the independent variables. Due to provincial heterogeneity province was employed as a random effect in all three models. All variables were converted to logs allowing the coefficients to be interpreted as estimates of price elasticity.</p> <p>Results: The tax variable was significant in each equation. In the equations for overall cigarette sales and premium cigarette sales, taxes and quantities of cigarette sold were significant and inversely related. The tax elasticity in the overall market equation was -0.54, consistent with previous research, while in the regular cigarette market equation, the tax elasticity was -0.91. In other words, as taxes increased sales of premium cigarettes decreased at a faster rate than the market as a whole. Consistent with this result is the finding that tax elasticity on discount cigarettes was 1.37 implying that as taxes increased, sales of discount cigarettes also increased.</p> <p>Conclusions: These results provide further evidence that, in Canada, recent increases in taxes have resulted in smokers switching from regular priced cigarettes to discount priced cigarettes, thus mitigating the possible effects of tax increases. In addition, these results provide an indication of the magnitude of the impact of tax increases on smokers' behaviour.</p>

Study	Publication notes
<p>Gospodinov, 2009</p>	<p>Tobacco taxes and regressivity Gospodinov, N and Irving, I. J Health Econ 2009 Mar;28(2):375-84. Abstract: Recent literature on tobacco taxation suggests that optimal tax rates should be very high. But such high taxes raise concerns over regressivity. Most econometric estimates of elasticities by income group use historic price data that are low, and the usefulness of such estimates is therefore questionable on account of the serious 'out of sample' prediction problem. To address that problem, this paper estimates price elasticities for different socioeconomic groups using recent Canadian survey data for a period during which prices rose to a level of about \$7 per pack. The results provide little reason to overturn the traditional concerns about regressivity.</p>
<p>Sen, 2010 a</p>	<p>Estimating the impacts of cigarette taxes on youth smoking participation, initiation, and persistence: empirical evidence from Canada Anindya Sen and Tony Wirjanto Health Econ. 19: 1264–1280 (2010) Abstract: In response to the widespread availability of illegal contraband, the federal and five provincial governments in Canada implemented a 40–60% reduction to cigarette excise taxes in February 1994. We exploit this unique and discrete policy shock by estimating the effects of cigarette taxes on youth smoking with data from the 1992–1996 Waterloo Smoking Prevention Program, 1991 General Social Survey, 1994 Youth Smoking Survey, 1996–1997 and 1998–1999 National population Health Surveys, and the 1999 Canadian Tobacco Use Monitoring Survey. Empirical estimates yield daily and occasional participation elasticities from 0.10 to 0.14, which is consistent with findings from recent U.S.-based research. A key contribution of this research is in the analysis of lower taxes on a panel of 591 youths from the Waterloo Smoking Prevention Program, who did not smoke in 1993, but 43% of whom confirm smoking participation following the tax reduction. Employing these data reveals elasticities from 0.2 to 0.5, which suggest that even significant and discrete changes in taxes might have limited impacts on the initiation and persistence of youth smoking.</p>
<p>Sen, 2010 b</p>	<p>Obesity, smoking, and cigarette taxes: Evidence from the Canadian Community Health Surveys Anindya Sen, Mahdiyeh Entezarkheir, Alan Wilson Health Policy 97 (2010) 180–186 Objectives: Recent studies suggest an ambiguous relationship between obesity and cigarette taxes. We employ Canadian data to evaluate the effects of cigarette taxes on smoking and obesity. Methods: We use a simple reduced form approach and exploit the significant cross-province differences that exist between Eastern and Western Canada to estimate the effects of higher cigarette taxes using aggregate health region and individual level data from the 2003 and 2005 waves of the Canadian Community Health Surveys (CCHS). Results: OLS estimates based on health regions data suggest that a 10% increase in cigarette taxes is significantly correlated with a 4–5% increase in the percentage of obese population. We also find cigarette tax elasticities of between –0.2 and –0.4 with respect to the percentage of smokers. Estimates from individual level data are similar. Conclusions: In tandem, these results offer support to the possibility that health benefits from higher cigarette taxes and lower smoking, might be partially offset by a corresponding increase in obesity levels.</p>
<p>Azagba, 2011</p>	<p>Cigarette Taxes and Smoking Participation: Evidence from Recent Tax Increases in Canada by Sunday Azagba * and Mesbah Sharaf Int. J. Environ. Res. Public Health 2011, 8(5), 1583-1600 Abstract: Using the Canadian National Population Health Survey and the recent tax variation across Canadian provinces, this paper examines the impact of cigarette taxes on smoking participation. Consistent with the literature, we find evidence of a heterogeneous response to cigarette taxes among different groups of smokers. Contrary to most studies, we find that the middle age group—which constitutes the largest fraction of smokers in our sample—is largely unresponsive to taxes. While cigarette taxes remain popular with policy makers as an anti-smoking measure, identifying the socio-demographic characteristics of smokers who respond differentially to tax increase will help in designing appropriate supplementary measures to reduce smoking</p>

Study	Publication notes
<p>Sen, 2011</p>	<p>Do Lower Cigarette Taxes Increase Smoking? Evidence from the Canadian National Experiment Anindya Sen and Nafeez Fatima Canadian Tax Journal (2011) 59:2, 221 - 38 ABSTRACT In 1994, in response to widespread tobacco smuggling, the Canadian government and the governments of five provinces—Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island—reduced excise tobacco taxes by 45-60 percent. The excise taxes in the other five provinces, however, remained relatively unchanged. We exploit this quasi-experimental variation in order to evaluate the effects of lower taxes on daily smoking. In contrast, most US-based research has relied on rather modest annual changes to taxes at the state level and focused on the impact of increases to excise and sales taxes on cigarette consumption. Our study pools cross-sectional data from the 1991 General Social Survey and the 1994-95, 1996-97, and 1998-99 cycles of the National Population Health Survey. Our results offer some evidence that the reduction in taxes increased daily smoking among males, but not females. We also find differences in implied tax elasticities by age.</p>
<p>Matheson, 2015</p>	<p>Prices and social behavior: Evidence from adult smoking in Canadian Aboriginal communities Jesse A. Matheson Canadian Journal of Economics, 2015, 48(5), pp. 1661-1693 Abstract: This paper provides estimates of tobacco price elasticity explicitly distinguishing between two price effects: the direct effect, reflecting individual reaction to a price change, and the indirect effect, whereby price influences the individual by changing community smoking behaviour. Canada's Aboriginal communities are small and secluded, allowing for plausible identification of reference groups on a relatively large scale. Estimates suggest a 10% increase in price decreases daily smoking by 0.91 percentage points (2.11%), occasional smoking by 1.24 percentage points (8.27%) and average smoking intensity by 0.15 cigarettes per day (2.9%). It is found that the indirect effect almost doubles the response to a change in tobacco prices over the direct effect alone.</p>
<p>Manivong, 2017</p>	<p>The contribution of excise cigarette taxes on the decline in youth smoking in Canada during the time of the Federal Tobacco Control Strategy (2002–2012) Phongsack Manivong, Sam Harper and Erin Strumpf Can J Public Health 2017;108(2):e117–e123 ABSTRACT OBJECTIVES: To evaluate the impact of changes in cigarette taxes on smoking for youths aged 15–18 in Canada during the time of the Federal Tobacco Control Strategy (FTCS). METHODS: We used a difference-in-differences framework and leveraged the variation in cigarette taxes across Canada and over time. We used regression models with province and year fixed effects, and individual-level and provincial-level covariates on 2002–2012 data from the Canadian Tobacco Use Monitoring Survey. RESULTS: Tax increases generally did not affect smoking outcomes. Each increase of CAD \$1.00 (adjusted to year 2000 dollars) in excise cigarette taxes per package of 20 was associated with a 0.2 percentage point (95% CI: –1.8; 2.2) change in smoking prevalence, and a change of 0.3 in mean cigarettes smoked in the past week (95% CI: –1.2; 1.8). CONCLUSION: From 2002 to 2012, smoking prevalence and mean smoking frequency were in steady decline among youths in Canada. This decline, however, was evident even among provinces with stable or decreasing cigarette tax levels. Tobacco taxes have mostly increased since the 1980s, and so, tax levels were already quite high by the launch of the FTCS. Province fixed effects and common temporal changes accounted for 83.7% of the variation in smoking prevalence. We derived similar results for smoking frequency. The cumulative tax increase during our study period was at least \$1.00 for only three provinces. Thus, our findings suggest that factors driving down tobacco use among youths in all provinces appear to outweigh any impact of small tax increases at already high tax levels.</p>

Study	Publication notes
Cui, 2019	<p>The effects of cigarette price and the amount of pocket money on youth smoking initiation and intensity in Canada</p> <p>Yang Cui, Evelyn L. Forget, Yunfa Zhu, Mahmoud Torabi, Umut Oguzoglu Can J Public Health v.110(1); 2019 Feb</p> <p>Abstract</p> <p>Objectives To investigate the price and income elasticities of adolescent smoking initiation and intensity to determine the extent to which increased pocket money leads to greater smoking among youth, and whether higher taxes can mitigate this effect. Methods We used the 2012/2013 Canadian Youth Smoking Survey including students in grades 7–12. The multivariable logistic regression was used to examine the probability of smoking initiation, and a linear regression to examine the smoking intensity determined by province-level prices of cigarettes, pocket money, and a vector of individual characteristics, including age, sex, race, and school-related and psychosocial factors. Results Of respondents, 28.8% have tried cigarette smoking. More than 90% of these initiated smoking between age 9 and 17. Male smokers consumed a higher average number of whole cigarettes daily than did females. The price elasticity of smoking initiation and intensity for youth in the full sample were – 1.13 and – 1.02, respectively, which means that a 10% increase in price leads to an 11.3% reduction in initiation and a 10.2% reduction in intensity. The income elasticity of smoking initiation and intensity for youth in the full sample were 0.07 and 0.06, respectively, which means that a 10% increase in income leads to a 0.7% increase in initiation and a 0.6% increase in intensity. Conclusion Economic measures such as taxation that raise the price of cigarettes may be a useful policy tool to limit smoking initiation and intensity.</p>

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