

# Youth Smoking in Ontario 1981-1997: A Cause for Concern

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Smoking among youth has widespread and long-term public health implications. Adolescent patterns of smoking often continue into adulthood,<sup>1</sup> and cessation programs aimed at youth are frequently unsuccessful.<sup>2</sup> Moreover, it is estimated that cigarette smoking will account for over 50% of deaths in Canada before the age of 70 for 15-year-old current smokers if they continue to smoke.<sup>3,4</sup> The Ontario Tobacco Strategy, introduced in 1992 as part of the Ontario government's health reform agenda,<sup>5</sup> set a goal to reduce the prevalence of smoking among 12-19 year olds in the province to 10% by the year 2000. This report presents trend data from two major school surveys on smoking among Ontario youth, discusses potential causal factors and outlines strategies to address this public health problem.

## METHODS

The descriptive analyses, derived from the Ontario Student Drug Use Survey<sup>6</sup> and

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the Waterloo Smoking Prevention Projects,<sup>7</sup> span the years 1981-1997. The Ontario Student Drug Use Survey is a biennially repeated cross-sectional survey of Ontario students enrolled in grades 7, 9, 11 and 13, conducted by the Addiction Research Foundation (now a division of the Centre for Addiction and Mental Health) every two years since 1977. The sample design, comprised of 16 strata, is based on a single-stage cluster sample of classrooms stratified equally by grade level (grades 7, 9, 11 and 13) and proportionally by region (Toronto, Western, Eastern and Northern Ontario).

The 1997 sample consists of 3,990 students from 168 schools (response rate = 77%). Earlier cycles are comparable (number of students: 3,270-4,737; number of schools: 137-227; response rates: 76%-84%). *Past year smoking* means smoking more than one cigarette in the previous 12 months. *Daily smoking* is one or more cigarettes smoked each day in the previous 12 months. *Cigarettes per day* is the number of cigarettes smoked daily in the previous 12 months by daily smokers. Calculation of confidence intervals incorporates clustering effects.

In addition to conducting longitudinal surveys for smoking intervention trials, the Health Behaviour Research Group at the University of Waterloo carried out cross-sectional surveys of 9th-graders from 24 schools in Southwestern Ontario in 1995, 1996 and 1997. Youth smoking, measured in the spring of each year, was defined as *regular use* if the respondent usually smoked every week and *experimental* if the student had not quit but smoked less frequently than once a week. Prevalence rates are provided for regular and experimental smokers combined (current smokers).

## RESULTS

### Ontario Student Drug Use Survey

In 1997, 28% of Ontario students reported cigarette use, a rate that has remained unchanged since 1995 (Figure 1). Between 1981 and 1991, past year smoking among females declined from 35% to 22% ( $p < 0.05$ ), but increased between 1991 and 1997 to 29% ( $p < 0.05$ ). Smoking among males also declined between 1981 and 1991, from 26% to 22% ( $p < 0.05$ ), and increased to 26% ( $p < 0.05$ ) between 1991 and 1997. Significant increases also occurred in rates of daily smoking, with 20% of students reporting daily smoking in 1997 compared to 16% in 1991 ( $p < 0.05$ ).

Among daily smokers, the number of cigarettes smoked has remained stable since 1981 (range = 7.7-8.4, n.s.). Males consistently smoked about one cigarette more per day than females, although these differences were not statistically significant within years.

### Waterloo Smoking Prevention Projects

Smoking rates among southwestern Ontario 9th graders for the years 1995 through 1997 are substantially higher than in the provincial survey but show a similar pattern. Rates did not differ significantly by sex. Rates of current smoking for females and males were 34% and 32% respectively in 1995, 38% and 35% in 1996, and 36% and 32% in 1997. Comparable rates for 9th graders in the Ontario survey are 29% and 26% for females and males respectively in 1995 and 30% and 21% in 1997. Despite differences in the methodology and geographic areas sampled, smoking rates within Ontario and the southwestern region did

not change significantly between 1995 and 1997.

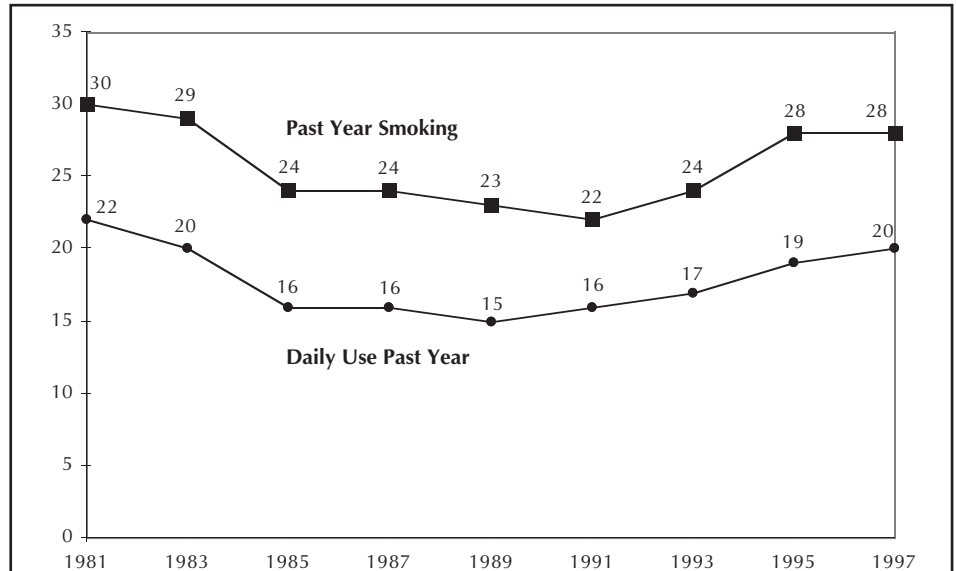
**DISCUSSION**

The data presented clearly show cause for concern. Rates of smoking among Ontario youth fell substantially during the 1980s, but rose during the 1990s and have recently plateaued. Similar patterns were observed in Ontario among adults during the 1990s, but were statistically significant only for females.<sup>8</sup> Daily consumption of cigarettes by youth did not change during this time period. Available data suggest that between one quarter and one third of youth are current smokers.<sup>7</sup> Clearly, the prospects for reducing the prevalence of youth smoking to the Ontario Tobacco Strategy goal of 10% by the year 2000 are poor.

Potential factors in the general increase in youth smoking during the 1990s, which have also been observed in Nova Scotia,<sup>9</sup> Prince Edward Island,<sup>10</sup> Great Britain,<sup>11</sup> and the United States,<sup>12</sup> include the increased access to cigarettes brought about by price cuts, since consumption is inversely related to price,<sup>13,14</sup> promotions and other marketing efforts,<sup>15</sup> and larger social changes related to use of other drugs and attitudes toward risk and acceptability.<sup>16</sup> Cigarettes are available to youth at about the same price they were after the 1994 tax rollback in which a federal and provincial tax cut reduced the price of a pack of cigarettes by about 50%. Furthermore, the price of a pack of cigarettes in early 1999 in Ontario is the lowest of all ten provinces and is substantially lower than prices in three border states,<sup>17</sup> eliminating any potential for smuggling.

Retailer compliance with legislation forbidding sales to minors did not improve from 1996 (74%) to 1997 (69%).<sup>18</sup> This pattern was evident for all types of establishments, with corner stores the most popular source of cigarettes for minors in 1997, followed by gas stations. The proportion of youth asked for photo identification increased from 39% in 1995 to 45% in 1997,<sup>6</sup> but still remains relatively low. Finally, research evidence for an effect of enforcement and retailer compliance on youth smoking is not conclusive.<sup>19</sup>

Efforts to reduce youth smoking in Ontario should focus on evidence-based



**Figure 1.** Past Year Smoking and Daily Smoking among Ontario Students 1981-1997

Source: Ontario Student Drug Use Survey 1981-1997 (grades 7, 9, 11, 13), Centre for Addiction and Mental Health, Addiction Research Foundation Division  
 Note: Past year smoking = more than 1 cigarette in past year

policy initiatives that reinforce existing programming and public education efforts. Young people are particularly responsive to price increases, and a substantial increase in provincial tobacco taxes would reduce both prevalence and consumption.<sup>20</sup> Very high levels of vendor compliance may have some impact on prevalence,<sup>21</sup> but restricting tobacco sales to government outlets would provide more effective control. Expanding bans on smoking in public places and workplaces to include those heavily frequented by young people, such as restaurants and bars, would reduce the visibility of smoking, in addition to protecting youth from second hand smoke. Since smokers report that relapse is more likely when others around them are smoking,<sup>22</sup> such bans are critical to support cessation efforts by young people. These measures, along with support for federal elimination of tobacco sponsorship and plain packaging of cigarettes, would constitute a broad public health strategy that would appropriately address youth smoking in this province.

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# COMING EVENTS ACTIVITÉS À VENIR

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To be assured of publication in the next issue, announcements should be received by May 15, 1999 and valid as of June 30, 1999. Announcements received after May 15, 1999 will be inserted as time and space permit.  
 Pour être publiés dans le prochain numéro, les avis doivent parvenir à la rédaction avant le 15 mai 1999 et être valables à compter du 30 juin 1999. Les avis reçus après le 15 mai 1999 seront insérés si le temps et l'espace le permettent.

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**Abstract deadline: 14 May 1999**