

# The Potential Impact of Provincial- Regional- and School-Level Tobacco Control Regulations on Young Adults' Smoking

Poster presented at 13<sup>th</sup> World Conference on Tobacco or Health; Washington, DC; July 12-15

Sandy Dupuis, MSc, Community Health Sciences, Brock University  
Kelli-an Lawrance, PhD, Community Health Sciences, Brock University,  
Jillian Giesler, MSc, Leave The Pack Behind, Brock University  
Linda Jessup, PhD, Health Studies & Gerontology, University of Waterloo

Funding for this study was provided by: the Ontario Tobacco Research Unit, the Government of Ontario and the Canadian Tobacco Control Research Initiative.

## Introduction

In the Canadian province of Ontario, 27% of young adults smoke cigarettes (CTUMS, 2005). On Canadian post-secondary campuses, smoking prevalence has been reported as high as 40% (Cairney & Lawrance, 2002; Adlaf, Gliksmann, Demers, & Newton-Taylor, 2003). Studies conducted in Canada and the United States have shown that tobacco control regulations in the general community have the potential to reduce tobacco use (Levy, Chaloupka, & Gitchell, 2004; McMullen, Brownson, Luke & Chriqui, 2005). Unfortunately, effective tobacco control strategies that have been applied to the general community are either absent or ill-defined on most Canadian post-secondary campuses (Borders, Xu, Bacchi, Cohen, & SoRelle-Miners, 2005). Furthermore, it is unknown whether or to what extent tobacco control policies on campus would influence students' tobacco use.

*Purpose:* The purpose of this study was to examine tobacco control policies of Ontario universities. Also of interest were the relative influences of university policies and local municipal by-laws, and hometown by-laws on young adults' current tobacco use.

## Methodology



There are 20 public universities in Ontario, Canada. A representative sample of 10 institutions participated in this study. The Registrar's Office of each participating institution agreed to send an email to all students inviting them to link to the on-line survey. Overall, 6,736 university students completed the anonymous on-line questionnaire about their tobacco use, and entered the draw for a 1-in-10 chance to win a \$10 gift certificate.\*

\* Out of an eligible population of 164,752 students from the participating universities in the study, resulting in a 4.10% response rate.

Additionally, the following information was linked to each participant's tobacco use data:

- (1) strength of tobacco control by-laws of the municipality where the student attended high school;
- (2) strength of tobacco control by-laws of the municipality where the student was attending university;
- (3) strength of campus policies of the student's university.

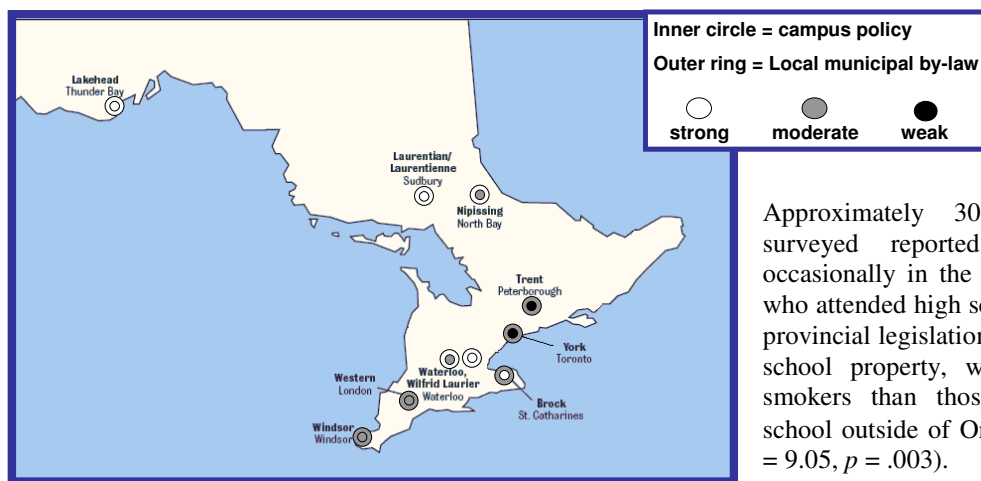
The strength of municipal tobacco control regulations – weak, moderate or strong – was categorized using classifications provided in the Ontario Municipal Bylaw Report. Campus tobacco control policies were categorized as weak, moderate or strong using researcher-designed criteria shown in Table 1.

**Table 1.**  
Classifying Strength of  
Campus Policies

Criteria for Determining Strength of Campus Policy	Classification
Smoking is banned in <i>all</i> indoor public areas Smoking is banned in residence/dormitory rooms Smoking is restricted in outdoor areas Point of purchase advertising and sale of tobacco is banned	Strong
Smoking is banned in all indoor <i>public</i> areas Smoking is banned in residence/dormitory rooms Smoking is restricted outdoor smoking to designated areas <i>Point of purchase advertising and sale of tobacco is permitted</i>	Moderate
Smoking is banned in all indoor <i>public</i> areas <i>Smoking is permitted in residence/dormitory rooms</i> <i>Smoking is unrestricted in outdoor areas</i> <i>Point of purchase advertising and sale of tobacco is permitted</i>	Weak

## Results

**Figure 1.** Strength of Campus Policies and Strength of Local Municipal By-laws



Approximately 30% of the students surveyed reported smoking at least occasionally in the past 30 days. Students who attended high school in Ontario, where provincial legislation bans smoking on high school property, were less likely to be smokers than those who attended high school outside of Ontario ( $\chi^2(1, N=5813) = 9.05, p = .003$ ).

### This percent of students experienced:

A campus policy that is.....	Weak (14.1%)	Moderate (54.4%)	Strong (31.5%)
A local municipal by-law that is....	Weak (0.0%)	Moderate (35.9%)	Strong (64.1%)
A hometown by-law that is....	Weak (3.1%)	Moderate (33.9%)	Strong (63.0%)

**Table 2. The Proportion of Students Experiencing Weak, Moderate, and Strong Campus Policies and Local Municipal Bylaw**

Campus Policy	Weak		Moderate		Strong	
	(%)	<i>d</i> *	(%)	<i>d</i>	(%)	<i>d</i>
Weak	--	--	40.5	32.6	0.0	24.2
Moderate	--	--	30.4	-15.7	68.7	11.7
Strong	--	--	29.1	-1.2	31.3	0.9

$\chi^2(2, N=5689) = 1764.64, p = .000$

\* standardized residuals can be interpreted like z-scores: values greater than  $\pm 1.96$  indicate a significant departure from the expected value for that cell at  $p < .05$ , two-tailed.

**Table 3. Logistic Regressions of Current Smoking Status on Students' Hometown By-law, Local Municipal By-law, Campus Policy, and the Combined Effect.**

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Hometown By-law Strength					
Weak †	--			--	--
Moderate	1.775*			1.764*	1.784 *
Strong	1.303			1.408	1.454
Local Municipal By-law Strength					
Moderate †		--		--	--
Strong		.610***		.632***	.763***
Campus Policy Strength					
Weak			1.870***		1.511***
Moderate			.938		.963
Strong †			--		--

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .0001$ . Odds Ratios are reported. †- symbol represents the reference group

**Table 4. The Proportion of Students Who Currently Smoke by Campus Policy and Local Municipal By-law Strengths**

Campus Policy	Local Municipal Bylaw					
	Weak		Moderate		Strong	
	(%)	<i>d</i> *	(%)	<i>d</i>	(%)	<i>d</i>
Weak	--	--	31.6	6.4	--	--
Moderate	--	--	23.5	1.4	17.6	-3.5
Strong	--	--	22.2	0.7	18.7	-1.7

$\chi^2(4, N=5412) = 74.16, p = .000$

## Conclusions

Results show that 40% of students attend a university with a strong policy, and 40% have a campus smoking policy that is weaker than the local municipal by-law. This is unfortunate given campus smoking policy strength was found to be the most significant predictor with respect to post-secondary students' tobacco use. Specifically, students who attend campuses with weak smoking policies are more likely to smoke than those from campuses with strong policies. Limitations such as failure to control for policy implementation duration suggest results must be interpreted with caution. Finally, these findings suggest universities need to adopt stronger smoking policies to reduce smoking prevalence.

### Correspondence can be addressed to:

Kelli-an Lawrance, Ph.D., Community Health Sciences Department, Brock University, 500 Glenridge Avenue, St. Catharines, ON, Canada, L2S 3A1 / kelli-an.lawrance@brocku.ca

Funding for this study was provided by the Ontario Tobacco Research Unit and the Canadian Tobacco Control Research Initiative