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SECONDHAND SMOKE AT BUILDING ENTRANCES: A PUBLIC HEALTH CONCERN

It has been well established that there is no safe level of exposure to tobacco smoke.¹ Even brief exposure can trigger asthma attacks in children,¹ and exposure can have immediate negative health impacts in adults including general respiratory and eye irritation, asthma symptoms, and cardiac effects (e.g., heart attack and vascular injury), particularly for vulnerable individuals.¹⁻⁴

With smokers congregating at building entrances, there is potential exposure to secondhand smoke as people enter and exit. In 2009, over half (54%) of Canadians reported being exposed to tobacco smoke at an entrance to a building in the past month.⁵ To combat this problem, many Canadian provinces, territories and municipalities have passed laws to control smoking at building entrances. However, the majority of these policies are focused on health facilities and public (i.e., municipal or government) buildings, and do not cover commercial office buildings or other types of work places.⁶

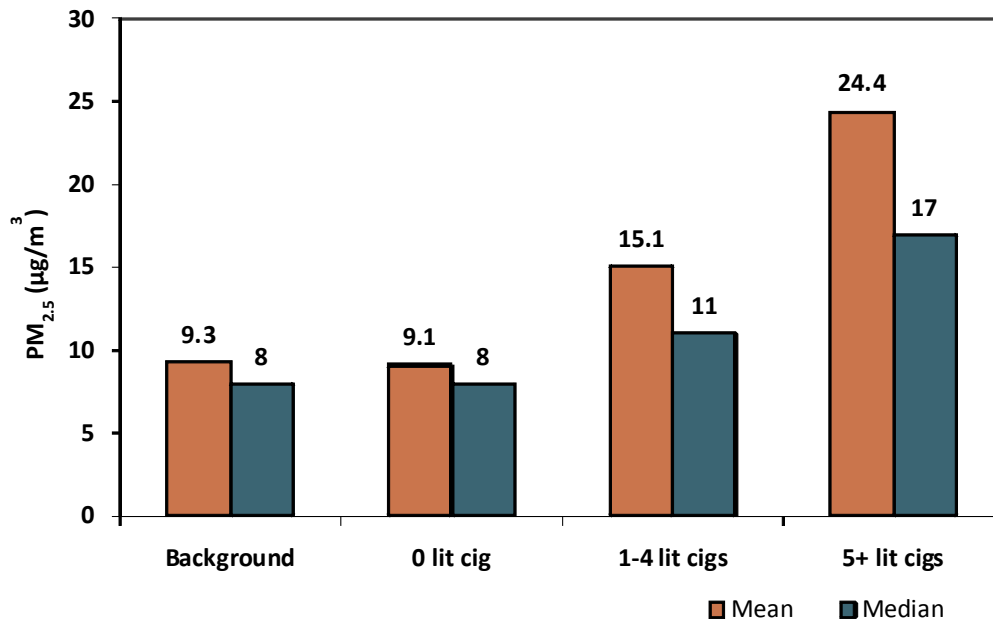
There is a need for information on the extent of tobacco smoke exposure at entrances to buildings to inform future smoke-free policy development. To address this gap, OTRU researchers conducted a study to measure levels of tobacco smoke at entrances to office buildings in real-world settings.⁷

During May and June 2008, OTRU researchers carrying real-time air quality monitors in backpacks, were stationed at the entrances of 28 commercial and corporate office building entrances in the central business district of Toronto. The air quality monitors measured levels of fine particulate matter (PM_{2.5}), an established marker for tobacco smoke.⁸ Researchers recorded the number of lit cigarettes within 9 metres of the entrance, the distance from the nearest lit cigarette to the monitor, the number of door openings, and the strength and direction of the wind. Passing trucks and buses or idling vehicles were also noted.

Levels of Tobacco Smoke at Entrances to Buildings

Levels of outdoor tobacco smoke increased with the number of lit cigarettes within 9 metres of building entrances (Figure 1).⁷ Average outdoor levels of fine particulates (PM_{2.5}) were 2.5 times higher than background levels, and maximum levels were more than 3 times higher.⁷

Figure 1: Average Outdoor PM_{2.5} (µg/m³) by Number of Lit Cigarettes within 9m of Building Entrances



Comprehensive Tobacco Control Should Include Smoke-Free Policies for Building Entrances

Exposure to secondhand smoke can have immediate negative health impacts. For many individuals, exposure at building entrances takes place repeatedly over weeks, months and even years. Smoke-free policies at entrances to buildings protect people who enter and exit from exposure to secondhand tobacco smoke. Workplace smoking policies have added benefits of increasing quit attempts and reducing cues to smoke, resulting in lower rates of relapse among smokers who attempt to quit.⁹⁻¹¹ Consistent smoke-free policies may also change social norms about the acceptability of smoking in locations where non-smokers are regularly exposed.^{12, 13}

OTRU's study supports the implementation of smoke-free policies at building entrances that are not currently covered by the Smoke-Free Ontario Act, such as office buildings. These policies have the potential to reduce direct health impacts of tobacco smoke exposure, and negative social and environmental impacts associated with smoking.

This update summarizes findings that were recently published: Kaufman P, Zhang B, Bondy SJ, Klepeis N, Ferrence R. Not just 'a few wisps': real-time measurement of tobacco smoke at entrances to office buildings. *Tobacco Control* 2011; 3:212-218. We thank Tobacco Control for permission to highlight the study findings.

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