



NEWFOUNDLAND AND LABRADOR  
MEDICAL ASSOCIATION

**NLMA POSITION PAPER**  
**ON**  
**SECOND-HAND SMOKE IN THE WORKPLACE**

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Prepared by the  
NEWFOUNDLAND AND LABRADOR  
MEDICAL ASSOCIATION  
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# NLMA Position Paper on Second-hand Smoke in the Workplace

## Introduction

There is a consensus among the most reputable scientific and medical academies and government agencies on the serious health hazards of second-hand smoke or environmental tobacco smoke (ETS). Exposure to second-hand smoke causes heart disease, lung cancer, nasal sinus cancer and respiratory ailments in adults, and it causes sudden infant death syndrome, fetal growth impairment and a wide range of respiratory conditions in infants and children, including bronchitis, pneumonia, middle ear disease and asthma exacerbation. More recent research has linked ETS exposure to cervical and breast cancer, stroke, and miscarriages in adults; and to asthma induction, decreased lung function, cystic fibrosis, and cognition and behavior problems in children. ETS exposure causes approximately 112 deaths per year in Newfoundland and Labrador and is the leading cause of workplace death.<sup>i</sup>

Given the overwhelming body of medical evidence which clearly demonstrates the direct causes and linkages between exposure to second-hand smoke and serious health effects among non-smokers, it is the position of the Newfoundland and Labrador Medical Association (NLMA) that it is the responsibility of the Government of Newfoundland and Labrador to address the serious health effects of second-hand smoke exposure in the most effective way by immediately legislating a province-wide ban on smoking in all workplaces including bars and bingos.

## New Medical Evidence

Second-hand smoke contains more than 4,000 different chemicals, including more than 50 known carcinogens and 103 chemicals identified as poisonous to humans. The chemical compounds in tobacco smoke include toxic heavy metals, pesticides, and dangerous chemicals like carbon monoxide, vinyl chloride, formaldehyde, hydrogen cyanide, radionuclides, benzene and arsenic.<sup>ii</sup>

The U.S Environmental Protection Agency has classified environmental tobacco smoke as a “*Group A Carcinogen*,” a classification reserved only for those compounds shown to cause cancer in humans based on studies of human populations.<sup>iii</sup> ETS causes more mortality than all other known environmental toxins combined,<sup>iv</sup> and increases the risk of death from heart disease by 20 to 30 per cent for non-smokers married to smokers.<sup>v</sup>

Since 1992, six major scientific reviews of the health effects of second-hand tobacco smoke have been published. These include reports of the United States Environmental Protection Agency published in 1992 & 1997;<sup>vi</sup> the Australian National Health and

Medical Research Council in 1997;<sup>vii</sup> the California Environmental Protection Agency in 1997;<sup>viii</sup> the United Kingdom Scientific Committee on Tobacco and Health in 1998;<sup>ix</sup> the World Health Organization in 1999;<sup>x</sup> and the United States National Toxicology Program in 2000.<sup>xi</sup> In addition to these six comprehensive reviews, the NLMA would like to add the two international reports conducted by the International Agency for Research on Cancer (IARC) in 1998<sup>xii</sup> and 2002<sup>xiii</sup>, and the May 2001 Ontario Tobacco Research Unit (OTRU) report on environmental tobacco smoke.<sup>xiv</sup>

These major reviews, and hundreds of other published studies, clearly lead to one conclusion: second-hand smoke is a direct cause of lung cancer, heart disease, nasal sinus cancer, a variety of respiratory conditions such as asthma, middle ear disease, bronchitis, and pneumonia (particularly in children), and SIDS.<sup>xv</sup> In addition to these direct causal relationships, the medical evidence has concluded that several other diseases and/or conditions may be caused by second-hand smoke exposure, including stroke, spontaneous abortion, adverse impacts on cognition and behavior in children, exacerbation of cystic fibrosis, cervical cancer and breast cancer.<sup>xvi</sup>

In Newfoundland and Labrador, passive smoking kills an estimated 112 people every year, 70 per cent from heart disease, seven per cent from lung cancer, and the remaining 23 per cent from other cancers.<sup>xvii</sup> It also causes more than 560 respiratory tract infections such as pneumonia and bronchitis in the province's infants, a worsening of the asthmatic conditions in up to 2,240 more children and up to 56 new cases of childhood asthma a year in the province.

## **Lung Cancer**

In 1992, the U.S. Environmental Protection Agency (EPA) report and the 1997 California EPA report both concluded that second-hand smoke is a cause of lung cancer and responsible for 3,000 deaths annually in the United States.<sup>xviii</sup>

Additionally, in 1997 a *British Medical Journal (BMJ)* review of the accumulated evidence on lung cancer and environmental tobacco smoke concluded that non-smokers living with a smoker have an excess lung cancer risk of 24%. Positive and negative adjustments for bias, misclassification, and diet produced an adjusted excess risk of 26 per cent.<sup>xix</sup> The 1998 report of the United Kingdom Scientific Committee on Tobacco and Health similarly concluded that ETS exposure is a cause of lung cancer, and that those with long-term exposure have an increased risk of 20 to 30 per cent.<sup>xx</sup>

In 1998, the International Agency for Research on Cancer (IARC) published the largest European study to date on the relationship between lung cancer and second-hand smoke. The study demonstrated a 16 per cent increase in the point estimate risk of lung cancer for non-smokers, a result consistent with the six major reports noted earlier.<sup>xxi</sup> An editorial in the *Journal of the National Cancer Institute* concluded that the new study data, plus previous evidence, presented “*an inescapable scientific conclusion . . . that second-hand smoke is a low-level lung carcinogen.*”<sup>xxii</sup>

In June 2002, a scientific working group composed of 29 experts from 12 countries convened by the Monographs Program of IARC, reinforced previous findings by concluding that second-hand smoke is carcinogenic to humans and a cause of lung cancer adding that: “involuntary *smoking involves exposure to the same numerous carcinogens and toxic substances that are present in tobacco smoke produced by active smoking, which is the principal cause of lung cancer.*”<sup>xxiii</sup>

The monograph also concluded that after conducting meta-analyses of more than 50 international studies of exposure to second-hand smoke and lung cancer risk in non-smokers over the past 25 years, there is a statistically significant and consistent association between lung cancer risk and those non-smokers exposed to second-hand smoke from active smokers, whether exposed to it by their spouses or in the workplace. Thus, “*involuntary smoking is a cause of lung cancer in never smokers.*”<sup>xxiv</sup>

## **Heart Disease and Stroke**

In 1983, the U.S Surgeon-General established that cigarette smoking is the largest preventable cause of heart disease in the United States.<sup>xxv</sup> Once the link was confirmed, smoking was found to kill more people due to heart disease than due to lung cancer. A study recently conducted by Health Canada supported these findings. It discovered that in 1997 more than 800 Canadians died from Coronary Heart Disease (CHD) as a result of second-hand smoke in the home.<sup>xxvi</sup>

The 1997 California EPA findings on the health effects of environmental tobacco smoke also support the above findings. It concluded that: “*The epidemiological data, from prospective and case-control studies conducted in diverse populations, in males and females and in western and eastern countries, are supportive of a causal association between second-hand smoke exposure from spousal smoking and coronary heart disease mortality in non-smokers.*”<sup>xxvii</sup>

Complementing the above findings was a recent study published in the July 2001 issue of the Journal of the American Medical Association.<sup>xxviii</sup> Using a digital ultrasound system a team of researchers at the Osaka City University Medical School in Osaka, Japan were able to observe in real time the actual effects of 30 minutes of second-hand smoke exposure on the coronary arteries. They discovered that 30 minutes of exposure broke down the normal antioxidant defenses of the endothelial cells and in so doing, stopped the cells from performing their function and prevented the arteries from increasing their blood flow. In the opinion of the researchers, “*this provides direct evidence of a harmful effect of passive smoking on the coronary circulation in non-smokers.*”<sup>xxix</sup>

There is also a growing body of research linking second-hand smoke exposure to acute stroke. A study published in the June 1999 issue of Tobacco Control found a significant increased risk of stroke in men and women when exposed to second-hand smoke.<sup>xxx</sup>

## Respiratory Disease

The link between second-hand smoke and childhood respiratory ailments, including bronchitis, pneumonia and asthma, has been well established. Much less research has been done on ETS and adult respiratory problems. Recent studies found that ETS elevates the risk of pneumococcal pneumonia, adult asthma, chronic bronchitis and emphysema, and increases the incidence of cough, phlegm, and days lost from work in workers exposed to second-hand smoke.<sup>xxx1</sup> The California Environmental Protection Agency has also reported that sensory eye and nasal irritation can result from ETS-related noxious stimulation of upper respiratory tract and corneal mucous membranes. In addition, the study found suggestive evidence of a causal association between ETS exposure and both cystic fibrosis and decreased pulmonary function.<sup>xxxii</sup>

Similarly, the United States Environmental Protection Agency found that:  
*“Environmental tobacco smoke has subtle but significant effects on the respiratory health of non-smokers, including reduced lung function, increased coughing, phlegm production, and chest discomfort.”*<sup>xxxiii</sup>

However, the study that is most relevant to the proposed Newfoundland and Labrador workplace legislation is one by Dr. Mark Eisner of the Division of Pulmonary and Critical Care Medicine, Department of Medicine, University of California, San Francisco. Dr. Eisner and his colleagues studied the respiratory health of San Francisco bartenders before and after the legislative prohibition of smoking in all bars and taverns in California from January 1, 1998. Self-reported ETS exposure among the interviewed bartenders declined from a median of 28 hours per week before the smoking ban (testing in December 1997) to two hours per week afterwards (testing in February 1998).<sup>xxxiv</sup> Before the ban, 74 per cent of the interviewed bartenders reported respiratory symptoms, including wheezing, dyspnea (shortness of breath), morning cough, cough during the rest of the day or night, and phlegm production. Symptoms were assessed using the International Union Against Tuberculosis and Lung Disease Bronchial Symptoms Questionnaire. Within two months of the ban, 59 per cent of these previously symptomatic bartenders no longer reported respiratory symptoms. Before the ban, 77 per cent of bartenders also reported ETS-related sensory irritation symptoms, including red, teary or irritated eyes; runny nose, sneezing or nose irritation; and sore or scratchy throat. Following the ban, 78 per cent of these previously symptomatic bartenders were free of symptoms.

## Do Ventilation and Non-Smoking Areas Provide Protection from ETS?

Opponents of smoke-free legislation have argued that ventilation systems can protect workers from the health effects of second-hand smoke. Indeed the Canadian Tobacco Manufacturer’s Council has given the Hotel Association of Canada \$3.2 million to implement its “Courtesy of Choice” program, *“which involves adopting ventilation and filtration systems to ensure that smoke and other contaminants in the air are removed.”*<sup>xxxv</sup>

However, a separate review of the published health literature on ETS exposure found that *“health impacts are still substantial even under ventilated conditions.”*<sup>xxxvi</sup> Separate smoking and non-smoking areas under the same ventilation system have been found to expose non-smokers to recirculated tobacco smoke.<sup>xxxvii</sup> One analysis concluded that even the most sophisticated ventilation systems would have to improve by a factor of 2,000 *“in order to meet the level of public health protection normally expected against environmental contaminants.”*<sup>xxxviii</sup>

Furthermore, although adequate ventilation can help dilute some air contaminants including nicotine, it does not eliminate environmental tobacco smoke, and it does not provide protection for employees from ETS exposure or its adverse health impacts. Even the best air-cleaning systems, if properly operated and maintained, which is often not the case, remove only some of the toxic components of tobacco smoke. *“In practice,”* concluded one analysis, *“mechanical ventilation systems alone are not a satisfactory alternative to banning or restricting smoking.”*<sup>xxxix</sup>

A recent revision to the internationally accepted ASHRAE ventilation standards, the most widely observed code of ventilation practice in Canada, accepts this conclusion. The 1999 revision (ASHRAE Standard 62-1999: *Ventilation for Acceptable Indoor Air Quality*) accounted for new knowledge on the health effects of ETS by removing an existing provision on ventilation rates for second-hand smoke. ASHRAE now applies ventilation rates only to air that is already free from tobacco smoke, and it refers instead to health authorities and scientific agencies that have determined that there should be no exposure to ETS.<sup>xl</sup>

ASHRAE has further concluded that no air cleaning technology current exists to effectively reduce tobacco smoke to levels that would provide adequate public health protection. The Ontario Tobacco Research Unit analysis noted that development of new technology capable of removing or reducing most of the more than 100 toxic agents from air polluted by tobacco smoke is unlikely.<sup>xli</sup>

## **Tougher Smoke-Free Legislation Required**

Since the passage of the 1993 Newfoundland and Labrador Smoke-Free Environment Act, smoking has been prohibited in day cares, schools, retail stores, acute health facilities, buses, taxis, and recreational facilities. As a result of recent amendments to the Smoke-free Environment ACT in January 2002, smoking is now banned in most public places, including restaurants frequented by children. Regrettably, smoking is still permissible in some hospitality sector workplaces such as bars, bingos and restaurants that do not cater to children.

Given the serious health impact of second-hand smoke and the increasing social consensus on the dangers of both smoking and the exposure to second-hand smoke, it is the position of the NLMA that all Newfoundland and Labrador workplaces and enclosed public places should be 100 per cent smoke-free. Second-hand smoke elimination must

be viewed as a positive and necessary step in maintaining and enhancing the health of the entire population including employees in the hospitality sector. The exposure of adult non-smokers to second-hand smoke, a known human carcinogen, can and must be viewed as being a direct violation of the rights of all non-smokers, in particular the rights of workers who frequently have no choice but to be exposed to second-hand smoke on a daily basis.

## **Litigation Costs and Legal Requirements**

There is also a growing body of legal precedent indicating that governments and employers are bound by law to ensure safe working environments for employees and to remove known health hazards from the workplace such as environmental tobacco smoke. The extent and reach of potential litigation can be seen in a spate of U.S. class action lawsuits by employee groups claiming harm from second-hand smoke exposure endured on the job. For example, Florida flight attendants settled a class action suit based on ETS exposure for \$349 million.<sup>xlii</sup> More recently, Boston attorneys have planned a lawsuit against the tobacco industry, restaurants and even restaurant associations that have vehemently opposed smoking bans. The potential litigation costs illustrate the perils that exist for restaurant and hotel associations if they align themselves too closely with the tobacco industry and its objectives. According to attorney Mark Gottlieb of Northeastern University's Tobacco Control Resource Center: *"We felt that the evidence has been very strong linking the health problems of bar and restaurant workers to environmental tobacco smoke. . . Normally, we would just focus on the tobacco industry. But here the actions of the restaurant owner may be relevant in terms of liability, so we're looking beyond the tobacco companies themselves."*<sup>xliii</sup>

Concern about potential litigation was one reason the California Restaurant Association (CRA), the largest restaurant trade group in that state, supported California's Smoke-Free Workplace Act and played an instrumental role in its passage. The CRA's constructive role and alignment with public health interests may be a model for the Newfoundland and Labrador hospitality industry with respect to both employee health and owner liability. *"CRA leaders supported a statewide prohibition of smoking in restaurant dining rooms and bars to protect workers from second-hand smoke and employers from liability in civil and workers compensation cases tied to individuals claiming they were harmed by on-the-job exposure to second-hand smoke."*<sup>xliv</sup>

From a legal perspective, it has also been argued that the privacy rights and freedoms of smokers end at the point that they invade a non-smoker's physical and decisional privacy rights not to breathe environmental tobacco smoke. A *Georgetown Law Journal* commentary on that legal issue argues for a change in *"the presumption that smoking is permitted wherever it is not expressly forbidden, to a presumption that smoking is permitted only in designated areas."* The author also notes that: *"The risks of liability for exposing a non-smoking employee to environmental tobacco smoke combined with the increased costs of hiring smokers provide a significant incentive for employers to institute restrictive hiring policies."*<sup>xlv</sup>

## Conclusion

Expert assessments, empirical evidence, risk assessment procedures, and internationally accepted indoor air quality and ventilation standards have determined that ventilation and non-smoking sections do not remove the toxic constituents of tobacco smoke from the air and provide no solution to the problem of exposure to second-hand smoke. Instead, the recommendations of expert scientific panels on ETS exposure are “*clear, consistent and unanimous – all involuntary exposure is harmful and should be eliminated.*”<sup>xlvi</sup>

Given the consistency of the growing body of health evidence, and the demonstrated costly human toll of second-hand smoke exposure, it is the position of the Newfoundland and Labrador Medical Association that there is an undisputable clear case for smoke-free workplace legislation in Newfoundland and Labrador. The NLMA urges the provincial government to immediately address the issue of second-hand smoke by introducing amendments to the smoke-free environment act which would ban smoking in all workplaces including bars and bingos.

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<sup>i</sup> Ronald Coleman, GPI Atlantic, (2003), *The Economic Impact of Smoke-Free Workplaces: An Assessment For NL*

<sup>ii</sup> Ontario Tobacco Research Unit, University of Toronto, (2001), *Protection from Second-Hand Tobacco Smoke in Ontario: A Review of the evidence regarding best practices*, Toronto, May, 2001, page 37; Hasbach, Ann, (1998), “Is Your Workplace a Threat to Your Health?”, *Consulting-Specifying Engineer*, Denver, supplement on workplace protection, pages 28-33; Smoke-Free Kings (2000), *Smoke-Free By-Laws: Questions and Answers*, October 2000.

<sup>iii</sup> For summaries of health risks due to second-hand smoke, see Health Canada, *Statistical Report on the Health of Canadians*, page 65; United States Environmental Protection Agency (1993 and 1994), *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*, National Institutes of Health, National Cancer Institute, Smoking and Tobacco Control Monograph 4 (NIH publication 93-3605), Bethesda, Maryland, August, 1993, and “Setting the Record Straight: Secondhand Smoke is a Preventable Health Risk,” EPA publication no. 402-F-94-005, June 1994; Nova Scotia Department of Health, *Smoke-Free Places: Towards Healthier Communities in Nova Scotia: A Discussion Paper*, 1997; National Research Council, Committee on Passive Smoking, Board on Environmental Studies and Toxicology, *Environmental Tobacco Smoke: Measuring Exposures and Assessing Health Effects*, National Academy Press, Washington D.C., 1986. Health Canada, “Passive Smoking: Nowhere to Hide,” available at <http://www.hc-sc.gc.ca/hppb/tobaccoreduction/factsheets/passive.htm> For a comprehensive set of references, see footnotes 106-124 in Report to the Minister of Health from Expert Panel on the Renewal of the Ontario Tobacco Strategy, *Actions Will Speak Louder than Words*, February, 1999.

<sup>iv</sup> Hyland, Andrew, and Cummings, Michael, (1999), “Consumer Response to the New York City Smoke-Free Air Act,” *Journal of Public Health Management and Practice* 5(1): 28-36, January, 1999, page 28, citing US Environmental Protection Agency, (1992), *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*, Publication no. EPA 600/6-90/006F, Washington, DC.

<sup>v</sup> Heart and Stroke Foundation of Canada, (1994), *Environmental Tobacco Smoke: Behind the Smokescreen*, Ottawa.

<sup>vi</sup> United States. Environmental Protection Agency. *Respiratory health effects of passive smoking: lung cancer and other disorders*. Washington, DC: Office of Health and Environmental Assessment; 1992 Dec. EPA/600/6-90/006F.

<sup>vii</sup> Australia. National Health and Medical Research Council. *The health effects of passive smoking*. Canberra ACT, Australia: The Council; 1997 Nov.

<sup>viii</sup> California. Environmental Protection Agency. *Health effects of exposure to environmental tobacco smoke*. Final report. Sacramento, CA: Office of Environmental Health Hazard Assessment; 1997 Sep.

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- <sup>x</sup> World Health Organization. Tobacco Free Initiative. International consultation on environmental tobacco smoke (ETS) and child health: consultation report. Geneva, Switzerland: World Health Organization; 1999 Jan. WHO/NCD/TFI/99.10
- <sup>xi</sup> United States. Department of Health and Human Services. National Toxicology Program. 9<sup>th</sup> report on carcinogens. Research Triangle, NC: National Toxicology Program; 2000
- <sup>xii</sup> Boffetta P, Agudo A, Ahrens W, et al. Multicenter case-control of exposure to environmental tobacco smoke and lung cancer in Europe. *J Natl Cancer Inst* 1998 Oct 7;90(19):1440-50
- <sup>xiii</sup> International Agency for Research on Cancer. Tobacco Smoke and involuntary smoking. Lyon France: IARC Press; In press 2003 Jun. IARC monograph volume 83
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- <sup>xv</sup> Ontario Tobacco Research Unit. Protection from second-hand smoke in Ontario: a review of the evidence regarding best practices. Toronto, ON: University of Toronto; 2001 May.
- <sup>xvi</sup> Ontario Tobacco Research Unit. Protection from second-hand smoke in Ontario: a review of the evidence regarding best practices. Toronto, ON: University of Toronto; 2001 May.
- <sup>xvii</sup> This estimate is based on several U.S. and international studies, including: U.S. Centers for Disease Control and Prevention, "State-Specific Prevalence of Current Cigarette Smoking Among Adults and the Proportion of Adults Who Work in a Smoke-Free Environment – United States, 1999," *Morbidity and Mortality Weekly Report* (2000) 49 (43): 978-982, November 3, 2000, page 978, citing Centers for Disease Control, "Smoking-attributable mortality and years of potential life lost – United States, 1984," *Morbidity and Mortality Weekly Report* (1997): 46: 444-451 (3,000 estimated US deaths due to lung cancer), and National Cancer Institute (1999), *Health effects of exposure to environmental tobacco smoke: the report of the California Environmental Protection Agency*, Bethesda, Maryland, U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, NIH publication no. 99-4645 (62,000 US coronary heart disease deaths annually among non-smokers exposed to ETS); also published as California Environmental Protection Agency (1997), *Health Effects of Exposure to Environmental Tobacco Smoke*, Office of Environmental Health Hazard Assessment, September, 1997, available at: [http://www.oehha.org/air/environmental\\_tobacco/index.html](http://www.oehha.org/air/environmental_tobacco/index.html), (360 annual lung cancer deaths and 4,200-7,440 annual ischaemic heart disease deaths due to ETS exposure in California, plus 120 annual sudden infant death syndrome deaths due to ETS). See also mortality estimates due to ETS in Glantz, Stanton, and Parmley, William (1991), "Passive Smoking and Heart Disease: Epidemiology, Physiology, and Biochemistry," *Circulation* 83 (1): 1-12, January, 1991; Glantz, Stanton and Parmley, William, (1995), "Passive Smoking and Heart Disease: Mechanisms and Risk," *Journal of the American Medical Association* 273 (13): 1047-1053, April 5, 1995 (both articles estimate a total of 53,000 US deaths due to passive smoking, including 37,000 from heart disease, 3,700 from lung cancer, and 12,000 from other cancers); Wells, A. (1988), "An estimate of adult mortality in the United States from passive smoking," cited in Glantz and Parmley (1991) op. cit., and Kawachi I., Pearce N., and Jackson R., (1989), "Deaths from lung cancer and ischaemic heart disease due to passive smoking in New Zealand," *New Zealand Medical Journal* 102: 337-340.
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- <sup>xl</sup> Ontario Tobacco Research Unit, University of Toronto, (2001), *Protection from Second-hand Tobacco Smoke in Ontario: A review of the evidence regarding best practices*, Toronto, May, 2001, page 22.
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<sup>xliv</sup> *Nation's Restaurant News*, New York, May 18, 1998.

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<sup>xlvi</sup> Ontario Tobacco Research Unit, University of Toronto (2001), *Protection from Second-Hand Smoke in Ontario: A Review of evidence regarding best practices*, May 2001, pages vi and 47