

SMOKE-FREE ENVIRONMENTS

Smoke-free Laws Improve Public Health

Secondhand smoke is a primary source of indoor air pollution in workplaces and other indoor places, such as bars, restaurants, and airports. Secondhand smoke exposure causes lung cancer and other lung disease (such as bronchitis), heart disease, low birth-weight births and other serious conditions. Smoke-free laws improve public health by reducing the public's exposure to secondhand smoke, helping smokers reduce cigarette consumption, and helping smokers quit.

Smoke-free laws reduce indoor air pollution.

Smoke-free laws eliminate secondhand smoke, the primary source of indoor air pollution, and significantly improve air quality.

- A study of more than 1,800 public places in 32 countries found that the level of indoor air pollution was 89% lower in places that were smoke-free than in those that allowed smoking.¹
- A review of the implementation of smoke-free laws in multiple locations found that the level of indoor air pollution declined by 71%–99% after the implementation of local, state, or national smoke-free legislation in New York, Massachusetts, Delaware, Hawaii, Scotland, Ireland, England, Finland, and Italy.²
- In Uruguay, air nicotine concentration (a byproduct of smoking) fell by an average of 91% among the public places tested (schools, hospitals, government buildings, airports, restaurants, and bars) after the implementation of their national smoke-free law.⁴

Smoke-free laws reduce exposure to secondhand smoke.

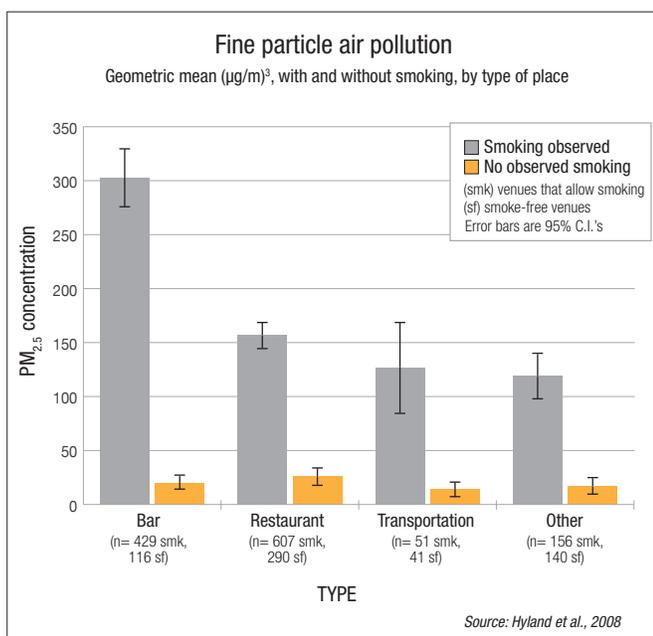
Research consistently shows that smoke-free laws reduce exposure to secondhand smoke among workers and non-smokers.

- In the United States, secondhand smoke exposure among the nonsmoking population dropped from 88% during 1988–1991 to 40% during 2007–2008. This decline is attributable in large part to increases in the number of local and state laws prohibiting smoking in indoor workplaces and public places and decreased smoking prevalence.⁵
- In New York City, 150,000 fewer New Yorkers were exposed to secondhand smoke on the job one year after the implementation of the city's clean indoor air law.⁶
- One year after Scotland's 2006 smoke-free law, salivary cotinine levels (a biomarker for secondhand smoke exposure) dropped by 89% among nonsmoking bar workers.⁷

Smoke-free laws improve public health.

Smoke-free laws reduce exposure to secondhand smoke and improve the public's overall health.

- A meta-analysis conducted by the United States Institute of Medicine concluded that smoke-free laws decrease acute coronary events, such as myocardial infarction.⁸ For example:
 - In Scotland, admissions for acute coronary syndrome in nine major hospitals dropped by 17% within the 10 months after implementation of its national smoke-free law. There was a 14% reduction in the number of admissions for acute coronary syndrome among smokers, a 19% reduction among former smokers, and a 21% reduction among persons who had never smoked.⁹
 - In Saskatoon, Canada, the incidence of heart attacks dropped 13.5% in the first year following implementation of its 2004 smoke-free law.¹⁰



- Hospital admissions decreased for acute myocardial infarction by 13%, for unstable angina by 33%, for stroke by 14%, and for asthma by 22% in 2007, the year following implementation of Arizona's statewide smoke-free law.¹¹
- A study comparing the average hospital admissions for asthma six years before and three years after Scotland's 2006 smoke-free legislation found that hospital admissions for asthma dropped 15.1% among school children (age <15).¹²
- In Neuquén, Argentina, a survey among workers in 88 bars found a reduction in respiratory symptoms (pre-ban 58%, post-ban 29%) and a reduction in irritated eyes, nose or throat (pre-ban 86%, post-ban 38%) within three months after implementing a 100% smoke-free law.¹³
- One year after Ireland's 2004 smoke-free law was implemented, bar workers in Dublin reported improvements in measured pulmonary function and significant reductions in irritant symptoms (e.g. red eyes, runny nose, scratchy throat).³
- One month after Scotland's smoke-free law, bar workers with asthma showed improvements in airway inflammation and in self-reported quality of life.¹⁴
- A World Bank report on the global tobacco epidemic concluded that smoking restrictions can reduce overall tobacco consumption by 4–10%.¹⁶
- Following Ireland's smoke-free law, 59% of smokers reported they had cut back because of the law, 46% reported the law made them more likely to quit, and, of those who quit, 79% said the law helped them succeed.¹⁷
- A review of 26 studies from the United States, Australia, Canada, and Germany found that, after workplaces implemented 100% smoke-free policies, smoking prevalence among employees decreased by 3.8% and continuing smokers smoked 3.1 fewer cigarettes per day.¹⁸
- In Norway, daily smoking among food service workers declined by 7.1% after the implementation of a smoke-free law in restaurants and bars. Overall, there was an 11.8% decrease in per capita cigarette consumption among food service workers (e.g. waiters, bartenders, etc).¹⁹

Smoke-free laws help reduce cigarette consumption and youth initiation.

Smoke-free laws help reduce opportunities to smoke and make tobacco use less socially acceptable. In addition to protecting nonsmokers, smoke-free laws reduce smoking prevalence and consumption in smokers.¹⁵

Key messages

Smoke-free laws:

- **Reduce secondhand smoke exposure and improve indoor air quality.**
- **Reduce cigarette consumption and help smokers quit.**
- **Save lives and have immediate public health impacts.**

(1) Hyland A, Travers MJ, Dresler C, Higbee C, Cummings KM. A 32-country comparison of tobacco smoke derived particle levels in indoor public places. *Tob Control* 2008;17(3):159-65. (2) Hahn EJ. Smokefree legislation: a review of health and economic outcomes research. *Am J Prev Med* 2010;39(6 Suppl 1):S66-76. (3) Goodman P, Agnew M, McCaffrey M, Paul G, Clancy L. Effects of the Irish smoking ban on respiratory health of bar workers and air quality in Dublin pubs. *American Journal of Respiratory and Critical Care Medicine* 2007;175(8):840-5. (4) Blanco-Marquiza A, Goja B, Peruga A, Jones MR, Yuan J, Samet JM, et al. Reduction of secondhand tobacco smoke in public places following national smoke-free legislation in Uruguay. *Tob Control* 2010;19(3):231-34. (5) Kaufmann R, O'Halloran A, Bishop E, Tynan M, Caraballo R, Pechacek T, et al. Vital signs: nonsmokers' exposure to secondhand smoke – United States, 1999-2008. *MMWR Morb Mortal Wkly Rep* 2010;59(35):1141-6. (6) New York City Department of Finance, Department of Health and Mental Hygiene, Department of Small Business Services, Economic Development Corporation. The state of smoke-free New York City: A one-year review. New York: Department of Health and Mental Hygiene, 2004. (7) Semple S, Maccalman L, Naji AA, Dempsey S, Hilton S, Miller BG, et al. Bar workers' exposure to second-hand smoke: the effect of Scottish smoke-free legislation on occupational exposure. *Ann Occup Hyg* 2007;51(7):571-80. (8) U.S. Institute of Medicine. Secondhand smoke exposure and cardiovascular effects: Making sense of the evidence. Washington, DC: Institute of Medicine, 2009. (9) Pell JP, Haw S, Cobbe S, Newby DE, Pell AC, Fischbacher C, et al. Smoke-free legislation and hospitalizations for acute coronary syndrome. *N Engl J Med* 2008;359(5):482-91. (10) Lemstra M, Neudorf C, Opondo J. Implications of a public smoking ban. *Can J Public Health* 2008;99(1):62-65. (11) Herman PM, Walsh ME. Hospital Admissions for Acute Myocardial Infarction, Angina, Stroke, and Asthma After Implementation of Arizona's Comprehensive Statewide Smoking Ban. *Am J Public Health* 2010. (12) Mackay D, Haw S, Ayres JG, Fischbacher C, Pell JP. Smoke-free legislation and hospitalizations for childhood asthma. *N Engl J Med* 2010;363(12):1139-45. (13) Schoj V, Alderete M, Ruiz E, Hasdeu S, Linetzky B, Ferrante D. The impact of a 100% smoke-free law on the health of hospitality workers from the city of Neuquen, Argentina. *Tob Control* 2010;19(2):134-7. (14) Menzies D, Nair A, Williamson PA, Schembri S, Al-Khairalla MZH, Barnes M, et al. Respiratory symptoms, pulmonary function, and markers of inflammation among bar workers before and after a legislative ban on smoking in public places. *Jama-J Am Med Assoc* 2006;296(14):1742-48. (15) World Health Organization International Agency for Research on Cancer. Evaluating the Effectiveness of Smoke-free Policies. IARC Handbook of Cancer Prevention. Lyon: WHO IARC, 2009. (16) The World Bank. Curbing the epidemic: Governments and the economics of tobacco control. Washington, DC: The World Bank, 1999. (17) Fong GT, Hyland A, Borland R, Hammond D, Hastings G, McNeill A, et al. Reductions in tobacco smoke pollution and increases in support for smoke-free public places following the implementation of comprehensive smoke-free workplace legislation in the Republic of Ireland: findings from the ITC Ireland/UK Survey. *Tobacco Control* 2006;15 Suppl 3:iii51-8. (18) Fichtenberg CM, Glantz SA. Effect of smoke-free workplaces on smoking behaviour: systematic review. *BMJ* 2002;325(7357):188. (19) Braverman MT, Aaro LE, Hetland J. Changes in smoking among restaurant and bar employees following Norway's comprehensive smoking ban. *Health Promot Int* 2008;23(1):5-15.