



# The Effects of Secondhand Smoke on Worker Health

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Former U.S. Surgeon General Jesse Steinfeld first exposed the health risks of secondhand smoke in 1971,<sup>1, 2</sup> but it was not until the late 1980s that we learned the extent of the public's secondhand smoke exposure. At that time, 91.7 percent of Americans were found to have an indicator of secondhand smoke exposure on their bloodstream,<sup>3</sup> and only 3 percent of workers nationally reported a "no smoking" policy at their place of employment.<sup>4</sup> Policymakers began to take steps to minimize the impact of secondhand smoke. Laws prohibiting smoking in certain public venues were enacted at the local, state, and national levels.

Today, smoke-free policies have effectively reduced the number of people exposed to secondhand smoke in the workplace.<sup>5</sup> The proportion of nonsmokers with detectable levels of a secondhand smoke indicator has dropped below 50 percent.<sup>6</sup> Forty years after the first Surgeon General's report on the health consequences of smoking, the most recent report, *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*, unequivocally states that there is no risk-free level of exposure to tobacco smoke.<sup>7</sup>

Unfortunately, not all workers have the same level of protections. Although now 62 percent of the U.S. population are covered by smoke-free workplace laws, 74 percent are covered by smoke-free restaurant laws, and 63 percent are covered by smoke-free bar laws, still less than half of the population (47%) are covered by smoke-free laws in all three types of venues.

The American Cancer Society Cancer Action Network (ACS CAN) believes that all Americans have the right to breathe smoke-free air. No one should have to choose between their livelihood and their health.

## Hospitality Workers are at Higher Risk for Secondhand Smoke Exposure

- The workplace is a major source of secondhand smoke exposure for adults, and secondhand smoke exposure in the workplace has been linked to an increased risk of heart disease and lung cancer among nonsmoking adults.<sup>8</sup>
- Food service workers have a 50 percent greater risk than the general public of dying from lung cancer, in part because of their continuous exposure to secondhand smoke in the workplace.<sup>9</sup>
- Blue collar and service workers are exposed to more secondhand smoke at the workplace than white collar workers and are less likely to be covered by smoke-free policies.<sup>10,11</sup>
- Compared to other workers, bartenders, waiters, and waitresses are less likely to be protected by smoke-free policies and more likely to breathe secondhand smoke even when smoke-free policies are put into effect.<sup>12</sup>
  - When there are not smoke-free policies in effect, levels of secondhand smoke in restaurants are 1.6 to 2 times higher than levels measured at office worksites and 1.5 times higher than levels in homes with at least one smoker.<sup>13</sup>
- Without smoke-free policies in effect, bars and lounges have among the highest concentrations of secondhand smoke of all public spaces – exposing bartenders to even greater levels of secondhand smoke than waiters and waitresses.<sup>14</sup>
  - When there are not smoke-free policies in effect, levels of secondhand smoke in bars are 3.9 to 6.1 times higher than levels measured at office worksites and up to 4.5 times higher than levels in homes with at least one smoker.<sup>15</sup>

- In a 1997 study in San Francisco, CA, 74 percent of bartenders surveyed reported respiratory symptoms (e.g., wheezing, cough, etc.), and 77 percent reported sensory irritation symptoms (e.g. red, teary, or irritated eyes, runny nose, sneezing, sore or scratchy throat, etc.).<sup>16</sup>
- Casino workers are exposed to high levels of secondhand smoke in the workplace and are at higher risk for secondhand smoke related illness.
  - The National Institute for Occupational Safety and Health (NIOSH) conducted a health hazard evaluation at an Atlantic City, N.J., casino. When compared with the results of other surveys, workers had exceptionally high levels of a secondhand smoke exposure indicator in their bloodstreams.<sup>17</sup>
  - The study found that casino workers who staffed non-smoking tables did not have lower levels of secondhand smoke exposure than workers who staffed smoking tables.<sup>18</sup>
  - Researchers found generalized exposure to secondhand smoke throughout the entire gaming area, suggesting that casino patrons as well as casino employees who did not participate in the study (e.g. waitresses, cashiers, security personnel) incurred the same levels of exposure to secondhand smoke demonstrated by the dealers and supervisors in the study.<sup>19</sup>
  - NIOSH found occupational exposure to secondhand smoke increased workers' risk of lung cancer and other diseases. The agency recommended that workers be protected from involuntary exposure to secondhand smoke.
- Tobacco smoke is a complex mixture.\* When compared to mainstream smoke, sidestream smoke emits higher amounts of several toxic chemicals.<sup>20,21</sup> For each cigarette smoked, a nonsmoking employee inhales:
  - as much benzene as one who has smoked six cigarettes;
  - as much 4-aminobiphenyl as one who has smoked 17 cigarettes; and
  - as much N-nitrosodimethylamine as one who has smoked 75 cigarettes.<sup>22</sup>

### **Smoke-Free Policies Improve Workers' Health**

- Although secondhand smoke exposure declined among all worker groups between 1988 and 2002, the decline was greatest among blue collar and service workers, who each experienced a 76 percent decrease in a secondhand smoke indicator during that 14-year time period.<sup>23</sup> Also during that time, the number of local 100% smoke-free ordinances in effect nationwide increased from 0 to 47.<sup>24</sup>
- The evidence shows that implementing smoke-free policies has immediate benefits on restaurant and bar workers' health. Hospitality workers experienced an 89 percent decline in secondhand smoke exposure just 5 months after New York state passed its Clean Indoor Air Act.<sup>25</sup>
- The percentage of hospitality workers exposed to secondhand smoke declined from 91 percent to 14 percent one year after New York's smoke-free law went into effect. The amount of time that hospitality workers were exposed to secondhand smoke on the job decreased 98 percent (12.1 hours to 0.2 hours).<sup>26</sup>
- Restricting or banning public smoking reduces nicotine concentration levels in office and non-office worksites.<sup>27</sup>
- Concentrations of a secondhand smoke indicator among New York City hospitality workers decreased significantly (from 4.7 ng/ml to 0.8 ng/ml) one year after the city went smoke-free. In addition, reports of one or more sensory symptoms (eyes, nose, throat) declined from 88 percent to 38 percent one year after the smoking ban.<sup>28</sup>

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\* For more information on the composition of secondhand smoke, please see the American Cancer Society's factsheet "The Facts About Secondhand Smoke."

- A 2008 study of Minnesota hospitality workers showed that after implementation of a smoke-free law, concentrations of a secondhand smoke indicator decreased by over 80 percent.<sup>29</sup>
- Of bartenders with prior sensory irritation symptoms (eye, nose, or throat irritation), 78 percent reported no symptoms approximately one month after California's bars were required to go smoke-free. Of those with prior respiratory symptoms (wheezing, dyspnea, cough, and phlegm production), 59 percent reported no symptoms within a month after California's bars were required to go smoke-free. Pulmonary function also improved after smoking was prohibited in bars.<sup>30</sup>
- More importantly, smoke-free policies may reduce workers' long-term risk of lung cancer and cardiovascular disease.<sup>31, 32, 33, 34, 35</sup>

### **Smoke-Free Policies Improve the Bottom Line**

- Smoke-free policies are associated with reduced cigarette consumption.<sup>36, 37</sup> Policies that encourage smokers to quit or to cut back their tobacco consumption ultimately save employers money.
  - Smoking increases both employer and employee medical care costs.
    - Employers bear a large share of the health care costs for tobacco users through employer-provided health insurance.
    - After analyzing the number and type of paid claims from a large group indemnity health plan, researchers found that tobacco users had more admissions to the hospital, longer hospital stays, higher average outpatient payments, and higher average insured payments.<sup>38</sup>
- Smoking employees have significantly higher absentee, injury, accident, and disciplinary rates than their nonsmoking colleagues.<sup>39, 40, 41, 42</sup>
- Other costs associated with smoking in the workplace are increased housekeeping and maintenance costs. The Environmental Protection Agency (EPA) found that if most businesses nationwide implemented smoking restrictions, the savings in operating and maintenance costs would total between \$4 billion and \$8 billion a year.<sup>43</sup>
- In 1994, the EPA estimated that eliminating secondhand smoke in all indoor workplaces would reduce premature deaths and tobacco-related illness enough to save between \$35 billion and \$66 billion a year.<sup>44</sup>
- The tobacco industry has aggressively campaigned for ventilation alternatives to 100% smoke-free laws.<sup>45</sup> But the evidence is clear: ventilation is ineffective and costly.
  - No U.S. science agency has found that ventilation systems reduce occupational exposure to secondhand smoke to an acceptable level.<sup>46, 47</sup>
  - In a recent position statement, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) said "the only means of effectively eliminating health risk associated with indoor exposure is to ban smoking activity." ASHRAE acknowledges that no current engineering approaches can control health risks from secondhand smoke exposure.<sup>48</sup>
  - The U.S. Surgeon General determined that cost-effective technologies for filtering tobacco smoke from the air are currently unavailable.<sup>49</sup>
- By allowing smoking in the workplace, business owners increase their costs of doing business. Employers pay increased health, life, and fire insurance premiums, make higher workers' compensation payments, incur higher worker absenteeism, and settle for lower worker productivity.<sup>50, 51, 52, 53, 54, 55, 56, 57</sup>

### **Conclusion**

Secondhand smoke has become an occupational hazard for many workers, including casino, restaurant, bar, and hotel employees. Job-related exposure to secondhand smoke may be a significant, but entirely preventable, cause of premature death among U.S. workers.<sup>58, 59, 60</sup> According to Dr. Donald Shopland and colleagues, “smoke-free workplace policies are common sense public health measures that cost virtually nothing to implement, are largely self-enforcing—especially when accompanied by public education efforts—and have no negative economic consequences, while making places of employment healthier and safer places to work and visit.”<sup>61</sup>

ACS CAN urges policymakers and community leaders to support smoke-free efforts, so we can save the lives of those most vulnerable to secondhand smoke.

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