



# The Effects of Secondhand Smoke on Worker Health

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Former Surgeon General Jesse Steinfeld first exposed the health risks of secondhand smoke in 1970.<sup>1, 2</sup> But it was not until the late 1980s when we learned the extent of the public's secondhand smoke exposure: 91.7 percent of Americans were found to have traceable levels of cotinine\* in their bloodstreams<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 public smoking 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> Unfortunately, not all workers have the same level of protections. The American Cancer Society believes that all Americans have the right to breathe smoke-free air. No one should have to choose between a job and good health.

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

- 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>6</sup>
- Although 76 percent of white-collar workers are covered by smoke-free policies, just 52 percent of blue-collar workers and 43 percent of food service workers benefit from these protections.<sup>7</sup>
- Blue collar and service workers continue to report smoke-free coverage rates well below the national average.<sup>8</sup>
- Waiters and waitresses have the highest levels of secondhand smoke exposure.<sup>9</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>10</sup>
  - 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>11</sup>
- Fewer than 15 percent of bartenders nationwide are protected from secondhand smoke exposure.<sup>12</sup>
  - 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>13</sup>
  - 74 percent of bartenders surveyed in San Francisco, California in 1997 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>14</sup>
- Casino workers 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, New Jersey casino. Workers' cotinine levels were 1.85 nanograms per milliliter (ng/mL). These levels were considered exceptionally high when compared to other surveys.<sup>15</sup>
  - Casino workers who staffed non-smoking tables did not have lower levels of secondhand smoke exposure than workers who staffed smoking tables.<sup>16</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

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\* Cotinine is a biomarker for secondhand smoke exposure.

- 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>17</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.<sup>†</sup> When compared to mainstream smoke, sidestream smoke emits higher amounts of several toxic chemicals.<sup>18, 19</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>20</sup>

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

- 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>21</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>22</sup>
- Restricting or banning public smoking reduces nicotine concentration levels in office and non-office worksites.<sup>23</sup>
- Cotinine concentrations 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>24</sup>
- 78 percent of bartenders with prior sensory irritation symptoms (eye, nose, or throat irritation) reported no symptoms approximately one month after California's bars were required to go smoke-free. 59 percent with prior respiratory symptoms (wheezing, dyspnea, cough, and phlegm production) 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>25</sup>
- More importantly, smoking policies may reduce workers' long-term risk of lung cancer and cardiovascular disease.<sup>26, 27, 28, 29, 30</sup>

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

- Food preparation and service occupation workers are the fastest growing segment of the workforce.<sup>31</sup>
- Workers with the lowest rates of smoke-free policy coverage are also those who have the highest smoking rates.<sup>32</sup>
- Smoke-free policies are associated with reduced cigarette consumption.<sup>33, 34</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>35</sup>

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<sup>†</sup> For more information on the composition of secondhand smoke, please see the American Cancer Society's factsheet "The Facts About Secondhand Smoke."

- Smoking employees have significantly higher absentee, injury, accident, and disciplinary rates than their non-smoking colleagues.<sup>36, 37, 38, 39</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>40</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>41</sup>
- Service workers are among the least likely to have health insurance through their employers. In 2004, only 54 percent of service workers had employment-based health coverage, as compared to 71 percent overall.<sup>42</sup>
- The tobacco industry has aggressively campaigned for ventilation alternatives.<sup>43</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>44, 45</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>46</sup>
  - The U.S. Surgeon General determined that cost-effective technologies for filtering tobacco smoke from the air are currently unavailable.<sup>47</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>48,49,50,51, 52, 53, 54, 55</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>56, 57, 58</sup> “Smoke-free workplaces 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>59</sup> The American Cancer Society 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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