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## **Unsafe at Any Level: Second-hand Smoke and Workers' Safety**

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The debate in Duluth over the recent smoking ban appears to be treading very familiar terrain over protecting business rights and individual freedom of choice. Some opponents to the ban complain that it is one more example of excessive government regulations taking away the rights of business owners to make decisions based on what their customers want. This position found voice in a recent Duluth News Tribune opinion piece, where Vickie Haugland, a Duluth bar owner, urged readers to support an effort to repeal the recent ban and “help us protect our way of doing business.” “Owners of hospitality establishments know their customers best,” she writes, and we need “to protect our right to accommodate all of our customers.”<sup>1</sup> Other opponents depict the smoking ban as an attack on personal freedom and individual consumer choice. In a recent letter to the editor, Vicki Anstett describes America as “the land of the free,” where each individual has the right to choose whether or not they will be subjected to cigarette smoke. “If a non-smoker does not want to breath secondhand smoke, then don’t go to an establishment that allows smoking,” Anstett reasons.<sup>2</sup>

There is a certain resonance to their arguments. At the very least, to deny smokers the ability to light up in a restaurant appears to privilege the rights of the non-smoker over that of the smoker. And certainly, non-smokers can vote with their feet and their pocketbooks, and if they do, eventually the marketplace will determine which “way of doing business” best satisfies consumers. As an asthmatic, I often make such decisions on where to dine or where to have a drink.

All of these arguments make a certain amount of sense except for one thing: second-hand smoke is not merely an irritant to be tolerated or avoided -- it is a Class A carcinogen, which means there is no safe level of exposure.<sup>3</sup> No one can seriously question the mountain of scientific data supporting the deleterious health effects of second-hand smoke.<sup>4</sup> Those who argue that

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<sup>1</sup> Haugland, Vickie. Petition to overturn smoking ban follows examples from other cities. [Duluth News Tribune](#) (June 21, 2001).

<sup>2</sup> Anstett, Vicki. Smoking ban eliminates freedom. [Duluth News Tribune](#) (June 20, 2001).

<sup>3</sup> U.S. Environmental Protection Agency (EPA). Respiratory health effects of passive smoking: Lung cancer and other disorders. 1992. Washington, DC.

<sup>4</sup> For a survey of many of the existing studies see Law MR, Morris JK, Wald NJ. Environmental tobacco smoke exposure and ischaemic heart disease: an evaluation of the evidence. [British Medical Journal](#) 1997; 973-980; Wells AJ. Heart disease from passive smoking in the workplace. [Journal of American College of Cardiology](#) 1998; 1-9;

individual businesses or individual consumers should be allowed to make their own decisions assume that everyone exposed to second-hand smoke has the freedom to choose their own level of exposure.

This clearly is not the case. Which gets me to the issue of workers' rights and safety. For me, the decision of whether to allow smoking in public places is not about my personal preferences, or even about protecting my health. Often when I leave a smoky bar I have to use my inhaler because of my asthma, but I know this when I decide to enter the bar. And like many people, I am also bothered by the stale smell of cigarette smoke that lingers on my clothes days after being in a bar. But my inconvenience is not the point; I ultimately *can* choose whether to go to the bar or not, knowing full well that I will stink when I leave. The employees who work in that bar and restaurant, however, do not have that choice, and it is their safety and their rights that I believe are most important in the current debate.

I return to a simple fact: second-hand cigarette smoke is a Class A carcinogen with no known safe threshold of exposure. As such, it joins only sixteen other designated Class A carcinogens, including asbestos, benzene, and radon -- all which I might add are tightly regulated in terms of environmental exposure and worker safety.

Second-hand smoke, just as cigarette smoke, maims and kills -- even at extremely low levels of exposure. Data now suggests that women who smoke as few as 1 to 4 cigarettes per day have more than two and one-half times the risk of cardiovascular heart disease when compared to non-smokers without any exposure to second-hand smoke.<sup>5</sup> Another study found that healthy teenagers exposed to passive smoking for as little as one-hour a day showed early arterial damage.<sup>6</sup> A growing body of evidence clearly suggests second-hand smoke harms workers who are exposed at even low levels.

Exposure to second-hand smoke for many workers exceeds what most of us would consider minimal levels. Bar and restaurant workers, for example, experience exposure levels to second-hand smoke four to eight times the level of exposure experienced by individuals living with a smoker at home.<sup>7</sup> Similarly, these workers experience four to eight times the levels of exposure of workers in offices and hospital where smoking is allowed.<sup>8</sup> Notably, most offices and all

Glantz SA, Parmley WW. Passive smoking and heart disease; epidemiology, physiology, and biochemistry. Circulation (1991) 83: 1-12; EPA 1992 study, *Ibid*.

<sup>5</sup> Kawachi I, Colditz GA, Stampfer MJ, Willett WC, Manson JE, Rosnere B, Speizer FE, Hennekens CH. Smoking cessation and time course of decreased risks of coronary heart disease in middle-aged women. Arch Internal Medicine (1994) 154:169-175;.

<sup>6</sup> Celermajor DS, Adams MR, Clarkson P, et al. Passive smoking and impaired endothelium-dependent arterial dilation in healthy young adults. New England Journal of Medicine (1996) 334: 150-154.

<sup>7</sup> Jenkins RA, Palausky A, Counts RW, Bayne CK, Dindal AB, Guerin MR. Exposure to environmental tobacco smoke in sixteen cities in the United States as determined by personal breathing zone sampling. Journal of Exposure Analysis and Environmental Epidemiology (1996) 6(4): 473-502; Guerin MR, Jenkins RA, Tomkins BA. The chemistry of environmental tobacco smoke: Composition and measurement. 1992. Michigan: Lewis Publishers; Quan C. Comparing environmental tobacco smoke intake among restaurant workers and adults at home. 1998. <http://www-mcnair.berkeley.edu/98journal/cquan>.

<sup>8</sup> Quan, *Ibid*; Coultas DB, Samet JM, McCarthy JF, Spengler JD. A personal monitoring study to assess workplace exposure to environmental tobacco smoke. American Journal of Public Health (1990) 80:988-990.

hospitals are smoke-free in Minnesota and many other states under Clean Indoor Air laws, while most restaurants and bars continue to allow smoking.

But what do such exposure levels really mean? It is difficult to make exact comparisons, and equating a workers' exposure to carcinogenic chemicals with that worker smoking "x" number of cigarettes is an uncertain science: intake and toxicity are functions of a variety of factors, and second-hand smoke itself contains higher levels of some toxic substances compared to "mainstream" smoke.<sup>9</sup> Still, for broad comparative purposes, it is useful to draw some sort of equivalency. The best data available suggests that a spouse exposed to 24 hours of passive smoke from a pack-a-day smoker inhales the equivalent toxins of three cigarettes. This equivalent exposure rises to six cigarettes for the average office worker exposed to second-hand smoke for eight hours in the workplace. And the customer or worker who spends two hours in a smoky bar has inhaled the equivalent of four cigarettes.<sup>10</sup>

What this means for workers is disturbing: a bartender who works an eight-hour shift is exposed to levels of carcinogenic toxins equivalent to smoking 16 cigarettes, or nearly a pack a day. These involuntary exposure levels, at a minimum, exceed nicotine levels and OSHA's fine particle standards at what is called the *de manifestis* level of increased risk, a risk level that would normally prompt federal regulatory action.<sup>11</sup>

The impact such toxic exposure has on workers' health is startling. Bar and restaurant employees face a 50 percent greater risk of lung cancer; this is a greater risk than virtually any other occupation, including firefighters and miners. Waitresses have the highest level of lung cancer rates among working women.<sup>12</sup> Another study analyzing 32,000 U.S. female nurses found that non-smoking nurses exposed to second hand smoke solely on the job had a 49 to 92 percent higher risk of cardiovascular heart disease than non-smoking nurses who had no exposure to second-hand smoke.<sup>13</sup> A study of California bartenders found 77 percent reporting respiratory symptoms.<sup>14</sup> A comprehensive review of eight studies of workplace exposure to second-hand smoke found a 18 percent higher relative risk of cardiovascular disease for workers

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<sup>9</sup> Mainstream smoke refers to the smoke that is directly inhaled through the cigarette as compared to second-hand, or "sidestream," smoke which comes off the end of the burning cigarette.

<sup>10</sup> Hammond SK, Sorenson G, Youngstron R, Ockene J. Occupational exposure to environmental tobacco smoke. *JAMA* (1995) 274:956-960; Hiltz PJ. How many cigarettes have you smoked today without knowing it. *Good Housekeeping* (November 1996) 170;

<sup>11</sup> Stillman FA, Becker DM, Swank RT, Hantula D, Moses H, Glantz S, Waranch R. Ending smoking at the John Hopkins Medical Institutions: an evaluation of smoking prevalence and indoor air pollution. *JAMA* (1990) 264: 1565-1569; Repach J. Fact sheet on second-hand smoke. Paper presented at the 2<sup>nd</sup> European Conference on Tobacco or Health. Canary Islands, Spain. (February 23-27, 1999); Kawachi I, Colditz G, Speizer F, Manson J, Stampfer MJ, Willett WC, Hennekens CH. A prospective study of passive smoking and coronary heart disease. *Circulation* (1997) 95:2374-2379. The *de manifestis* level of increased risk refers to a standard where it is estimated that the risk factor will contribute to 3 additional deaths per 10,000 persons who are exposed to the factor for 40 years. The *de minimus* level of risk is an additional 1 death per 10,000 persons, which is considered "acceptable" by most United States regulatory agencies. In contrast, a *de manifestis* risk normally would result in regulatory action to minimize or mediate the risk factor.

<sup>12</sup> Quan. *Ibid*; Hammond (1995) *Ibid*; Physicians for a Smoke-free Canada. Secondhand smoke. As cited in *A message for bar and restaurant workers*. City of Ottawa Public Health Branch.

<sup>13</sup> Kawachi (1997) *Ibid*.

<sup>14</sup> Eisner MD, Smith AK, Blanc PD. Bartenders' respiratory health after establishment of smoke-free bars and taverns. *JAMA* (1998) 280:1990-1914.

exposed to second-hand smoke at work.<sup>15</sup> And employees exposed to second-hand smoke miss twice as many days of work compared to smoke-free offices due to increased colds, eye irritation, and respiratory illnesses.<sup>16</sup>

The debate over whether to allow smoking in bars, restaurants and other work places must address this issue of workers' safety. It is not enough to say that businesses and the marketplace should be allowed to make this decision, or that individual consumers should even solely make the decision by voting with their feet and pocketbooks.

Most of us will agree that government, as the collective voice of citizens, has a regulatory responsibility to protect workers' and the public's safety and health. We require safety harnesses, eye and ear protection, steel-toe shoes, respirators, and a myriad of other safety measures for workers exposed to hazardous work conditions -- we do not say that workers should have to face such hazards on the job or seek employment elsewhere. We regulate air quality and prohibit certain activities like burn barrels and toxic emissions -- we do not say that if someone is bothered by polluted air they can move to where the air is cleaner. We regulate water quality and prohibit certain activities like dumping motor oil on the ground or industrial waste into our rivers and lakes -- we do not say that you have the choice to buy water elsewhere or choose to move upstream from the paper mill. We regulate food quality through inspections and food preparation through proper refrigeration and ensuring cutting boards are free of contamination -- we do not tell people that they have a choice of whether or not to patronize a restaurant that gives food poisoning or buy milk that doesn't contain salmonella. We regulate how much liquor a bar can serve a customer, and if that customer drives away having drunk too much we hold the bar responsible -- we do not say that this is a market decision that is determined by whether the customer wants another drink. Most of us take these regulatory functions as routine and as an appropriate role for government.

Exposure to second-hand smoke by workers, unlike many other hazards workers face on the job, is entirely preventable simply by eliminating smoking in the workplace. And elimination of the hazard source is the only known way to prevent significant exposure; increased ventilation is inadequate, as study after study has shown. Even under the more stringent ASHRAE ventilation standards, levels of several toxic substances found in second-hand smoke remain above safe levels.<sup>17</sup>

When the source of second-hand smoke is eliminated, workers experience immediate positive effects. California bartenders reported an almost immediate reduction in respiratory symptoms as early as one month after their exposure to second-hand smoke was virtually eliminated by California's smoke-free law.<sup>18</sup> Interestingly, this reduction in symptoms was reported by both smokers and non-smokers, and by many employees who were opposed to the ban. Another study showed a direct correlation between an employer's smoking policy and lower nicotine

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<sup>15</sup> Glantz and Parmley Ibid; Wells Ibid.

<sup>16</sup> Statistic quoted in CHEST. University of California, San Diego. July 1991.

<sup>17</sup> Repace Ibid.

<sup>18</sup> Eisner Ibid.

concentrations in the workplace -- from levels nearly three times the *de manifestis* standard in open offices that allowed smoking to virtually no nicotine in work sites that banned smoking.<sup>19</sup>

Workers are beginning to fight back and hold the tobacco industry and employers responsible for their exposure to toxic second-hand smoke. Legal actions were filed by former flight attendants exposed to tobacco smoke on airplanes and by casino workers. Both of these cases were eventually lost under an enormous legal attack by the tobacco companies, but the liability issues have not gone away. Some Boston lawyers in 1998 began advertising for restaurant employees to file suits under worker compensation laws; several new lawsuits against employers who exposed employees to second-hand smoke are working their way through the courts; and several Canadian Provinces recently instituted strict exposure standards restricting worker exposure to second-hand smoke in bars, restaurants and other hospitality industries under their Worker Compensation Boards.

I return once again to the simple fact I began with: second-hand smoke is a Class A carcinogen that has no known safe level of exposure. It is a hazard that has profound consequences on the health and safety of workers, who unlike businesses and consumers, have no choice over whether or not to be exposed. Exposure to second-hand smoke is a hazard that is entirely preventable by prohibiting smoking in public places. Whether or not we take this action is now our collective choice to make.

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<sup>19</sup> Hammond Ibid.