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# The SCIENCE AND POLITICS of SECONDHAND SMOKE

Thank you for joining the campaign for a smoke-free Minnesota. This guide to the Science and Politics of Secondhand Smoke will provide you with information and resources to help you advocate for smoke-free laws in your community. These materials will equip you with the most recent scientific understanding about the health effects of secondhand smoke, prevention strategies that work, policy initiatives in Minnesota, and arguments used by opponents.

As clinicians, we see the consequences of secondhand smoke every day. We understand the devastating health effects. That's why communities look to us for leadership.

Your perspective and expertise is needed. Please make your voice heard. Together we can reduce unnecessary death and disease and clear the air for all Minnesotans.

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# THE SCIENCE OF SECONDHAND SMOKE

## Studies of note

2006: U.S. Surgeon General concludes that secondhand smoke causes premature death and disease in children and adults who do not smoke and recommends eliminating smoking in all indoor spaces.<sup>1</sup>

1997: California EPA identifies exposure to secondhand smoke as causally related to Sudden Infant Death Syndrome, asthma and ear infections in children and cardiovascular disease.<sup>2</sup>

1992: U.S. Environmental Protection Agency identifies secondhand smoke as a human carcinogen, causing approximately 3,000 lung cancer deaths per year in nonsmokers.<sup>3</sup>

1986: U.S. Attorney General C. Evert Koop acknowledges causal link between exposure to secondhand smoke and increased risk for developing lung cancer.<sup>4</sup>

1986: National Academy of Sciences identifies increased rates of respiratory illness in children exposed to secondhand smoke and lower birth weights in infants exposed in utero.<sup>5</sup>

## HISTORY OF OUR UNDERSTANDING

In 1972, U.S. Surgeon General Jesse Steinfeld first raised the issue of environmental tobacco smoke and its possible effects on nonsmokers. In 1986, Attorney General C. Evert Koop acknowledged the causal link between secondhand smoke and lung cancer and called for further investigation. By 2006, a massive and conclusive body of research led Surgeon General Richard Carmona to declare that “The scientific evidence is now indisputable: secondhand smoke is not a mere annoyance. It is a serious health hazard that can lead to disease and premature death in children and nonsmoking adults.”

The debate is over. The scientific and medical communities now accept that secondhand smoke is a leading cause of preventable death and disease in nonsmokers.

## SOURCES OF EXPOSURE

Nearly 60 percent of nonsmoking Americans have biological markers indicating exposure to secondhand smoke.<sup>1</sup>

Blue collar, service and hospitality industry workers have the greatest exposure.<sup>15</sup> In fact, based on measurements of biological markers for cotinine and other cancer-causing agents, bar and restaurant employees have been shown to have 2-6 times higher exposure to secondhand smoke than employees in other workplaces.<sup>16</sup> While young males have the highest exposure, young females of childbearing age are of special concern given the significant risks to a developing fetus.

*There is no safe  
level of exposure to  
secondhand smoke*

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## HEALTH EFFECTS OF SECONDHAND SMOKE

Secondhand smoke contains 4,000 chemicals, 250 toxins and 11 known human carcinogens including formaldehyde, arsenic, benzene and lead.<sup>6</sup> Exposure to secondhand smoke is the third leading cause of preventable death in the U.S. following primary smoking and alcohol abuse, and is responsible for the death of approximately 49,000 nonsmokers every year.<sup>2</sup> The table at right estimates the annual morbidity and mortality attributable to secondhand smoke in the United States and Minnesota.

*Secondhand  
smoke is toxic  
and deadly.*

### ■ Respiratory System

Secondhand smoke exacerbates asthma and other respiratory conditions and can cause lung cancer in nonsmoking adults. In fact, nonsmokers who live with smokers have a 20-30 percent increased risk of developing lung cancer over nonsmokers who do not live with smokers.<sup>8</sup> In addition, there is a significant dose-response relationship between lung cancer risk and both the number of cigarettes smoked by the spouse and the duration of exposure.<sup>9</sup> Secondhand smoke has been implicated in the development of nasal carcinomas, contributes to acute and chronic respiratory symptoms, sinusitis, pneumonia and other infectious diseases, and may impair respiratory function.<sup>1</sup>

### Secondhand Smoke Annual Morbidity and Mortality <sup>2,7,41</sup>

	U.S.	Minnesota
Low Birth Weight Infants	9,700 – 18,600 cases	795 cases 44 deaths
Sudden Infant Death Syndrome (SIDS)	430 deaths	14 deaths
Lung Cancer	3,000 deaths	112 deaths
New Asthma Cases	8,000 – 26,000	160 - 520
Coronary Artery Disease	46,000 deaths	411 deaths

### ■ Cardiovascular System

While respiratory effects of secondhand smoke may be more immediately obvious, the adverse cardiovascular effects are the far greater threat. Numerous studies have revealed the connection between passive smoking and impaired endothelial function. As little as 30 minutes of exposure to secondhand smoke causes endothelial cell dysfunction in a healthy nonsmoker to the same degree as that of a habitual smoker.<sup>10</sup> Dysfunctional cells contribute to vasoconstriction, atherogenesis and thrombosis. Further, platelet aggregation is increased and aortic distensibility reduced after exposure to secondhand smoke.<sup>11,12</sup> Nonsmokers exposed to secondhand smoke have an increased risk of stroke and as much as a 50-60% increased risk of coronary artery disease.<sup>13,14</sup> In 2004, the CDC Office of Smoking and Health warned: "...all patients at increased risk of coronary heart disease or with known coronary artery disease should be advised to avoid all indoor environments that permit smoking."

## SCIENCE-BASED PREVENTION STRATEGIES

A multi-pronged strategy is necessary to prevent the death and disease resulting from exposure to secondhand smoke. The Centers for Disease Control and Prevention has identified a set of best practices that includes education, cessation, marketing strategies, and public policies. Physicians can encourage patients who smoke to quit and offer cessation services. Clinicians should also ask about secondhand smoke exposure and encourage patients to take the smoke-free home pledge.

Public policies are an important component to successful tobacco prevention efforts. Smoking restrictions in public places not only reduce exposure to secondhand smoke but help current smokers cut back. According to surveys, 70 percent of current smokers want to quit.<sup>17</sup> Smoke-free workplaces have been shown to reduce cigarette consumption by employees by nearly 30 percent.<sup>18</sup>

## SMOKE-FREE POLICIES REDUCE ILLNESS AND DEATH

Recent studies have demonstrated the immediate positive impact of workplace smoking restrictions on health outcomes. In 1998, a study of bartenders before and after a smoke-free workplace law took effect in California showed that, in just three months, employees had significant reduction in respiratory symptoms and improved pulmonary function.<sup>21</sup> Numerous studies have demonstrated correlations between smoke-free workplaces and a decline in rates of serious disease.

- Helena, MT: during the six months that a smoke-free workplace ordinance was in effect, admissions for acute myocardial infarction dropped by 40 percent.<sup>22</sup>
- Pueblo, CO: during 18 months after a smoke-free workplace ordinance was in effect, admissions for heart attacks dropped 25 percent.<sup>23</sup>

## A NOTE ON VENTILATION:

Some will argue that installing ventilation systems will reduce or eliminate exposure to secondhand smoke. However, air cleaning/ventilation systems only remove large particles and are, in fact, more likely to disperse secondhand smoke throughout a building. A study from American Society of Heating, Refrigeration and Air-Conditioning Engineers confirms that ventilation cannot control health risks from secondhand smoke.<sup>24</sup> Even ventilation manufacturers deny health benefit claims.


Brookstone: “No air purifier can protect against the health hazards associated with secondhand smoke.”<sup>25</sup>

Honeywell: “Honeywell has not in the past and does not make health hazard claims.”<sup>26</sup>

The Sharper Image: “No air cleaner can protect against the harmful effects of secondhand tobacco smoke.”<sup>27</sup>

## SMOKE-FREE WORKPLACES HELP SMOKERS QUIT

Investigators have found that smoke-free homes and workplaces are also associated with higher rates of attempts to quit smoking and that teens who work in smoke-free environments are 68 percent less likely to smoke than those who work where smoking is permitted.<sup>19,20</sup>



*26-36 percent of  
Minnesotans are exposed  
to secondhand smoke in  
the workplace.*<sup>15</sup>

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# THE POLITICS OF SECONDHAND SMOKE

## PUBLIC POLICY IN MINNESOTA

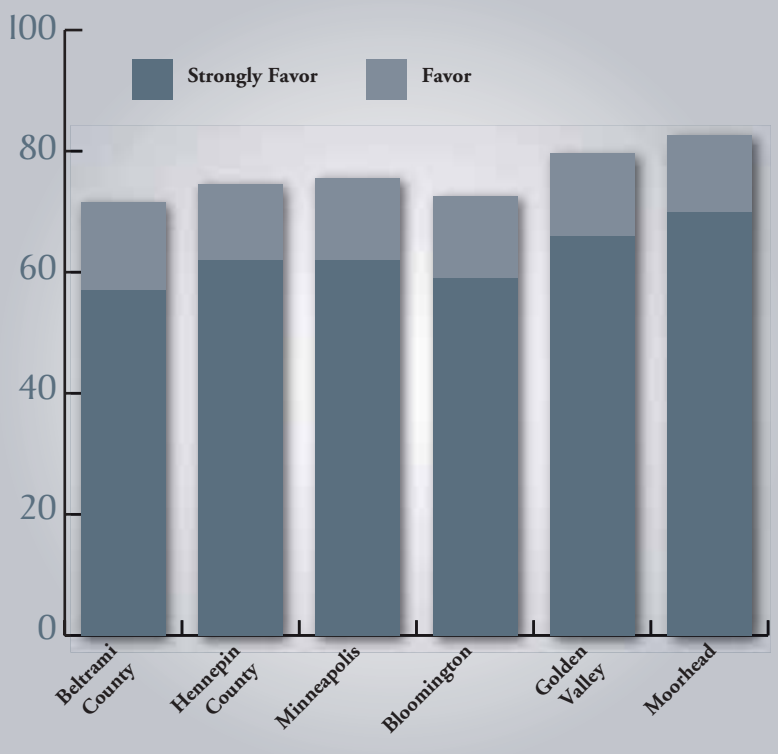
In 1975, Minnesota led the nation with the Clean Indoor Air Act which prohibited smoking in most public places and required separate non-smoking sections in others. Since then, a growing body of research delineating the dangers of secondhand smoke has made protecting workers an imperative for policymakers. Now that we know definitively that secondhand smoke is a significant health risk and that workplaces are a primary source of exposure for nonsmoking adults, it is time to eliminate smoking from all indoor workplaces.

Across the country and around the world, policymakers are protecting workers. As a state, Minnesota has fallen behind. Only about two-thirds of Minnesota workers are protected from secondhand smoke in the workplace.<sup>15</sup> As leaders in occupational safety and public health, it is critical that physicians join in efforts to advocate for tobacco control ordinances.

## THERE IS OVERWHELMING SUPPORT FOR SMOKE-FREE BARS AND RESTAURANTS

### Question:

As you may know, on (date), a law went into effect prohibiting smoking in most indoor public places in (county or city), including workplaces, public buildings, offices, restaurants and bars\*. Would you say that you favor or oppose this law?



\* Bars were not included in Moorhead ordinance

## PUBLIC SUPPORT

Surveys consistently show support for smoke-free laws. The vast majority of Minnesotans acknowledge that secondhand smoke is not only annoying, but harmful.<sup>28</sup> Whether from urban, suburban or rural communities, survey respondents support smoke-free indoor workplace laws.<sup>29</sup> The December 2006 ClearWay survey revealed that 69 percent of Minnesotans support a comprehensive statewide smoke-free law that includes restaurants and bars.

79 percent of Minnesota voters support a law requiring smoke-free workplaces, public buildings and restaurants<sup>30</sup>

In Greater Minnesota, 86 percent of nonsmokers and 59 percent of smokers agree that people who work in restaurants should have a smoke-free workplace<sup>29</sup>

59 percent of Minnesotans support a statewide ban on smoking in bars and restaurants<sup>30</sup>

73 percent of metro area and 65 percent of rural Minnesota residents support a comprehensive statewide smoke-free law that includes restaurants and bars<sup>31</sup>

Data indicates that smoke-free ordinances remain popular after implementation, too. In Mankato, a smoking ban that had been in effect for several months was approved by voters in a 2006 referendum by a solid 69 to 31 percent margin.<sup>32</sup> Mankato voters overwhelmingly supported a continuation of smoke-free bars and restaurants. A survey conducted by the Ramsey Medical Society showed that after three months, 72 percent of St. Paul residents supported their local smoking ban in bars and restaurants.<sup>33</sup> A survey by the Washington-based Mellman Group showed that after smoke-free policies had been in effect, residents in six communities continued to favor them by a wide margin.<sup>34</sup>

*Minnesota has not taken the lead despite a worldwide trend for smoke-free workplace policies*

# THE OPPOSITION

The tobacco industry understands that the growing scientific evidence about the health effects of secondhand smoke and resulting efforts to establish smoke-free workplaces are a threat to their business. In response, they have crafted a variety of tactics to fight clean air policies.

## CHALLENGING THE SCIENCE

No matter how overwhelming the evidence, tobacco industry executives criticize findings that secondhand smoke causes death and disease. Internal documents have revealed the tobacco industry's strategy to raise doubts about the findings of medical research in order to slow down efforts to expand smoke-free environments. Not only do they attack credible researchers, but the tobacco industry also sponsors sham research that is seldom peer-reviewed or published in reputable journals.<sup>35</sup> An analysis of scientific articles on secondhand smoke found that "No matter how we analyzed the data, tobacco industry affiliation was the only factor associated with concluding that passive smoking is not harmful to health..."<sup>36</sup>

The foundation of good medical decision-making has been built on rigorous basic science and clinical research and the peer review process. World-renowned research and medical institutions including the U.S. Centers for Disease Control and Prevention, the National Cancer Institute, the World Health Organization, The American Lung Association, the American Medical Association, the National Academy of Sciences, the U.S. Department of Health and Human Services and the U.S. Environmental Protection Agency have all concluded that secondhand smoke is a significant health hazard.

## ECONOMIC IMPACT

Tobacco companies have targeted restaurant, licensed beverage and gambling associations as key partners to carry the public message of opposition to smoke-free laws. With misleading information supplied by the tobacco industry, hospitality industry representatives claim that smoke-free ordinances threaten their livelihood.<sup>37</sup> But economic studies using objective data repeatedly demonstrate that smoke-free workplace ordinances have no negative effect on bars and restaurants. Using indicators such as sales tax data, revenues and levels of employment in communities from California to Massachusetts to Florida, researchers have found that smoke-free laws do not hurt local economies. The

Surgeon General's Report summarizes the comprehensive review of all available studies on the economic impact of smoke-free laws this way: "Evidence from peer-reviewed studies shows that smoke-free policies and regulations do not have an adverse economic impact on the hospitality industry."<sup>1</sup>

"Our [Philip Morris] objective to interact effectively with the hospitality industry is critical to our ultimate objective, which is to maintain the ability for our customers to enjoy our products in public venues such as restaurants, hotels, bowling centers and shopping malls."<sup>38</sup>

Some bar and restaurant owners in Minnesota will oppose local smoke-free workplace ordinances fearing a negative impact on their business. But, a comprehensive analysis of the economic impact after smoke-free laws were enacted in three Minnesota counties and four Minnesota cities found that there was "no apparent economic impact on the local economies examined in this report, or on the State of Minnesota as a whole."<sup>39</sup>

*Smoke-free policies do not hurt profits!*



## SECONDHAND SMOKE COSTS BILLIONS IN DIRECT MEDICAL EXPENSES

In considering the overall economic impact of smoke-free workplaces, it is imperative that we also consider the financial costs of exposure to secondhand smoke. Secondhand smoke is estimated to cost the U.S. economy nearly \$5 billion in direct medical expenses.<sup>40</sup> According to a recent report, secondhand smoke costs Minnesota taxpayers, individuals and businesses more than \$215 million in direct health care expenditures every year.<sup>41</sup>

*“You never saw anybody fight a smokefree measure as hard as I did. But you know what? I was wrong. The Pickwick’s atmosphere had changed for the better. Our business, too. It’s up 15 percent.” – Christopher Wisocki, owner, The Pickwick, Duluth<sup>43</sup>*

### Medical Costs of Health Conditions Caused by Secondhand Smoke in Minnesota, 2003 <sup>41</sup>

CONDITIONS BY AGE GROUP	NUMBER OF MINNESOTANS TREATED FOR CONDITIONS CAUSED BY SECONDHAND SMOKE	TOTAL COST (IN 2006 DOLLARS)
Birth to Age 17		
Low Birth Weight (under 5.5 lbs.)	795	\$38,051,594
Acute Lower Respiratory Illness (birth to age 3 only)	7,988	\$7,758,287
Otitis Media and Middle Ear Effusion	32,947	\$19,667,419
Asthma	17,547	\$21,129,913
Ages 18+		
Lung Cancer	388	\$19,063,956
Heart Attacks and Other Heart Diseases	7,034	\$110,041,403
<b>Total</b>	<b>66,699</b>	<b>\$215,712,572</b>

Smoke-filled workplaces also incur higher expenses related to cleaning, building maintenance and fire insurance. The CDC estimates that smoking in the workplace increases costs to employers by approximately \$1,300 per year per smoking employee.<sup>42</sup>

Despite initial fears, after going smoke-free many have found that their businesses thrive and that customers and employees are healthier.

## CLAIMING INDIVIDUAL RIGHTS

The final argument is strictly ideological. Smoke-free opponents claim an individual right to smoke and freedom of choice for customers. They argue that property rights should allow business owners to determine whether or not they go smoke free. They characterize smoke-free laws as big government intrusion into personal decision-making. While some may sympathize with the sentiment, personal freedoms are limited when they have an adverse affect on others. There is no Constitutional right to smoke and no right to pollute others’ air. In fact, one could argue that the public and workers have the right to breathe clean air.

While business owners have freedom to control their property, the government sets minimum health standards to protect employees and does not allow employers to expose workers to known carcinogens or toxins (e.g., asbestos). A comprehensive smoke-free law is needed to protect all workers from secondhand smoke, including bartenders and waitresses. Smoke-free workplace ordinances do not deny smokers their right to smoke, but restricts them from smoking in an environment where they affect others. The issue is a matter of public health.

THANK YOU for taking the first step by learning more about this important public health concern. To find out how you can reduce exposure to secondhand smoke in your community, contact the Minnesota Medical Association at (612) 378-1875.

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