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Secondhand Smoke: Ventilation and Air Filtration References

- **The Science** – December 2004
- **What Air Filtration Companies and the Tobacco Industry are Saying**
December 2004
- **Ventilation Technology Does Not Protect People From Second Hand
Tobacco Smoke** – *Campaign for Tobacco Free Kids*
- **Don't Buy The Ventilation Lie** – December 2004

All attached information includes sources and scientific references.

Provided by Dick Paulsen, Executive Director

April 5, 2005



Ventilation and Air Filtration: The Science

 [PDF Format](#)

December 2004

- A study published in the September 2004 edition of the Journal of Occupational and Environmental Medicine compared the indoor air quality of a casino, six bars, and a pool hall in Wilmington, Delaware, before and after the implementation of a smokefree law. The study found that the ventilation technology installed in these establishments did not protect the workers and the public, as secondhand smoke contributed 85-95% of the carcinogen PPAH, and 90-95% of the respirable particulate air pollution into the air. These contamination levels greatly exceed those encountered on major truck highways and polluted city streets.¹
- In less than two hours after New York's smokefree law went into effect and smoking stopped, the level of respirable particulate matter (PM) dropped to 15 percent of the level on a smoking night in restaurants and bars. Three months after the law became effective, the level of PM dropped by 90 percent in these venues. Prior to the smokefree law's implementation, New York hospitality employees working an eight hour shift, 250 days a year, were exposed to particulate matter levels seven times greater than the maximum level deemed as acceptable by the U.S. Environmental Protection Agency. In addition, PM dropped an average of 77 percent after the law went into effect in bowling alleys, pool halls, and bingo halls.²
- The 2002 Environmental Health Information Service's 10th Report on Carcinogens classifies SHS as a Group A (Human) Carcinogen--a substance known to cause cancer in humans. There is no safe level of exposure for Group A toxins.³
- The 1986 Surgeon General's report on involuntary smoking concluded that, "the simple separation of smokers and nonsmokers within the same airspace may reduce, but does not eliminate, the exposure of nonsmokers to ETS [environmental tobacco smoke]."⁴
- Using current indoor air quality standards, ventilation rates would have to be increased more than a thousand-fold to reduce cancer risk associated with ETS to a level considered acceptable to federal regulatory agencies. Such a ventilation rate is impractical since it would result in a virtual windstorm indoors.^{5,6}
- "Separation of smoking areas does not protect the workers and occupants within the smoking area. When separation is properly done (and this is not common), it can reduce the exposure of occupants in the nonsmoking areas, but there is no quantitative assurance that the remaining exposure meets any current health standard or goal."⁷
- "[T]o be at all effective in reducing the concentration of smoke in a space, any air cleaner must process many room air volumes per hour.... [E]ven large, expensive air cleaners with efficiencies for captured particles are capable of reducing, but not eliminating the environmental tobacco smoke tar particles in room air, and are not at all effective for gases, which contain most of the irritants.... [E]ven expensive particulate air cleaners cannot remove enough tar particles in room air to eliminate the cancer risk from environmental tobacco smoke. In general, filtration of indoor air to remove environmental tobacco smoke contaminants is futile - like trying to filter a lake to control water pollution."⁸
- Ventilated smoking rooms leak smoke into the rest of the building, harming everyone in the building. A recent research study conducted by and published for the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) "showed that up to 10 percent of smoking room air enters non-smoking areas just by opening and closing of a swing type entry door.... With supply and exhaust air flow that are practical for small smoking rooms, leaving the smoking room door open results in a large flow of air to adjoining non-smoking areas. To prevent this, smoking room doors should be equipped with an automatic closure mechanism."⁹

- "Changes in ventilation rates during smoking do not have a significant influence on the air concentrations of tobacco components. This means, in effect, that efforts to reduce indoor air pollution through higher ventilation rates in buildings and homes would hardly lead to a measurable improvement of indoor air quality."¹⁰
- "[I]t is noted that the specific amount of additional ventilation cannot be determined until cognizant health authorities have determined an acceptable level of environmental tobacco smoke (ETS)... An appendix ... provides a method to allow designers to determine additional ventilation over what would be provided in a similar non-smoking area. However, this additional ventilation is for the purpose of odor control only."¹¹
- "In managing workplace ETS risks, smoking policies such as separating smokers from nonsmokers in the same space or on the same ventilation system expose nonsmokers to unacceptable risk."¹²

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DON'T BUY THE VENTILATION LIE

November 2004

"Promote improved ventilation as the best solution and a better approach than smoking restriction legislation."

— Philip Morris (1989)

(Bates No: 2022710093-0129, <http://legacy.library.ucsf.edu/tid/zdi58e00>)

Ventilation does not eliminate the health risks caused by secondhand smoke. There is a consensus among public health authorities, scientists, technical experts (even those funded by the tobacco companies), and air filtration companies that ventilation cannot eliminate the death and disease caused by secondhand smoke exposure.¹ Despite this indisputable fact, tobacco companies, including Philip Morris, R.J. Reynolds, and Lorillard Corporation, have developed a number of strategies to find "comfort and balance for both non-smokers and smokers"² (coined as "accommodation"), by keeping them together in the same smoke-filled spaces. Over the years, the tobacco industry's "accommodation" has developed into a variety of different forms, ranging from the separation of smoking and nonsmoking sections, media relations programs, and ventilation.

Smokefree advocates and supporters should be on the look out for ventilation experts and manufacturers touting ventilation as a viable solution to smokefree environments.

WHY DOES BIG TOBACCO PROMOTE VENTILATION?

The ventilation "solution" was created in the early 1980s in order "to defeat mandatory and voluntary smoking restrictions... [and] to slow the decline of [the] social acceptability of smoking."³ As smokefree policies have become commonplace across the country, tobacco companies have developed programs to thwart smokefree efforts, as evidenced by their own statements:

- "Opportunities remain to achieve accommodation in hospitality, workplaces and selected other public places through a combination of: Ally development, Ventilation technologies, Communications programs."⁴
- "Encourage the introduction and passage of bills and ordinances setting acceptable ventilation standards."⁵
- "Create a model indoor air quality bill to be added to suggested state legislation book published annually. Model bill will focus on ventilation, filters, inspections, etc. Smoking will not be dealt with directly."⁶
- "Conduct indoor air quality briefings with key lawmakers and existing and potential allies to encourage their support of legislative efforts concerning ventilation standards."⁷

HOW DOES BIG TOBACCO MAKE VENTILATION LOOK GOOD?

CHALLENGE THE SCIENCE OF SECONDHAND SMOKE

"Strategy: Increase awareness of the true nature of indoor air pollution. Promote improved ventilation as the best solution and a better approach than smoking restriction legislation."

– Philip Morris (1989)

(Bates No: 2022710095-0129, <http://legacy.library.ucsf.edu/tid/zd|58e00>)

The tobacco industry often contracts with external engineers and scientists, who are seemingly credible individuals working for reputable institutions, to research ways to challenge the science of secondhand smoke. According to Philip Morris, there is a need to "Encourage continued participation of ETS [environmental tobacco smoke] scientists in briefings, publications, seminars and other efforts that point to environmental tobacco smoke as a minor indoor air quality factor."⁸

These researchers are instructed by the tobacco companies to categorize tobacco smoke with other indoor air pollutants, such as mold and dust, in hopes of shifting discussion away from secondhand smoke, so that "Smoking would not be dealt with directly."⁹ By lumping secondhand smoke with other indoor air pollutants, the tobacco industry seeks to project the impression that ventilation remedies the problem of secondhand smoke exposure just as it does with other airborne contaminants, and that it is unnecessary to eliminate the problem at its source by creating smokefree environments.

- **George Benda and the Chelsea Group**, www.chelsea-grp.com, have frequently presented themselves as independent "indoor air quality" experts when, in fact, they are consultants for Philip Morris. Chelsea Group staffers frequently show up in communities considering a smokefree law to mobilize opposition within the hospitality sector and to promote ventilation at lawmaker meetings and hearings. Benda and the Chelsea Group have appeared across the United States, from Honolulu, Hawaii, to Anchorage, Alaska. Whatever the community, the Chelsea Group's objective is the same: to "perform services related to the Strategic Technical Support Program ('STS')," which include "recommending methods for accommodating smokers and non-smokers," "identify and select... demonstration sites for the STS Project," "supervise site visits and implementation of the STS Protocol and obtain all necessary releases to use the data collected during site visits," "submit a paper to ASHRAE," and "provide access to Chelsea Group representatives and subcontractors upon request of an authorized Philip Morris representative for presentation and testimony." For these tasks, the Chelsea Group received \$200,000 in 1993.¹⁰
- **Elia Sterling of Theodore D. Sterling & Associates, Ltd.**, www.sterlingiaq.com, has ties to the tobacco industry dating back to 1968, at least. Sterling has been the recipient of \$287,000 in tobacco industry "special project" money to create studies that are used to promote ventilation as a solution to smokefree environments.^{11,12} Sterling also works with the American Gaming Association and the tobacco companies to lobby the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), an international body which creates heating, ventilation, and air conditioning standards frequently adopted by state and local governments and given the weight of law, to tailor their indoor air quality standards to

accommodate for secondhand smoke.¹³ On repeated occasions, Sterling has testified on behalf of the industry.¹⁴

- **Roger Jenkins and Oak Ridge National Laboratory (ORNL)** have well documented ties to the tobacco industry. While ORNL is a government laboratory, researchers also engage in private contracts, which do not have official government standing. ORNL consistently contracts with the tobacco industry through Roger Jenkins, an ORNL chemist who performs research on tobacco smoke and secondhand smoke exposure. In 1993, Jenkins received \$797,892 from the Tobacco Institute's Center for Indoor Air Research (CIAR).¹⁵ Michael Guerin, administrator for ORNL's analytical chemistry division, received more than \$1 million from the Council for Tobacco Research and CIAR.¹⁶ ORNL continues to conduct tobacco industry-funded studies on secondhand smoke exposure. In 2003, ORNL announced plans to conduct a study of indoor air pollution levels, including secondhand smoke, financed with \$750,000 from Philip Morris USA;¹⁷ and in June 2004, ORNL announced a new study that will look at the effects of three indoor air pollutants, including secondhand smoke, on heart rate variability. The two-year study is being conducted by Dr. Jenkins and is being funded by Philip Morris.¹⁸

CREATE FRONT GROUPS

"Where necessary, identify and work with indoor air quality allies in preparing legislation establishing acceptable ventilation standards... Conduct indoor air quality briefings with key lawmakers and existing and potential allies to encourage their support of legislative efforts concerning ventilation standards... Encourage indoor air quality allies to participate in existing state ventilation study commissions and promote improved ventilation standards as an effective response."

— Philip Morris (1989)

(Bates No: 2022710093-0129, <http://legacy.library.ucsf.edu/tid/zdf58e00>)

Knowing that the industry lacks public credibility, tobacco companies create ventilation front groups to influence the hospitality sector and to keep lawmakers from supporting smokefree policies.

- **USA Places Programs:** In 1998, Philip Morris created the "Places Program" to organize and mobilize leaders and influential players within the ventilation and hospitality industries to act as spokespeople for ventilation on behalf of the tobacco industry. These leaders, or "USA Place Team", are responsible for creating a ventilation demand within their respective business sectors by conducting "ventilation education for business owners." A Philip Morris document states: "Ideally, the technical leader also works to develop PM [Philip Morris] relationships with IAQ/HVAC professional organizations, academia, standard-setting and government bodies, technology manufacturers and market leaders in ventilation delivery, such as engineers, contractors, power companies, and others that may impact the development and delivery of ventilation options and acceptance of ventilation options as an alternative to bans."¹⁹

- **atmospherePLUS:** In 1998, atmospherePLUS was created and commissioned by Philip Morris and marketed as “a program for the National Licensed Beverage Association [NLBA]”²⁰ to “protect business owner choice.”²¹ In 1999, Debra Leach, executive director of the NLBA, issued a press release introducing the program.²² However, prior to the press release’s launch, PM recommended Leach credit the NLBA for “spearheading the effort [with the introduction of its atmospherePLUS program],” stating that “We [NLBA] are fortunate that Philip Morris USA has agreed to serve as our initial sponsor for this initiative and is lending financial and hands on support.”²³
- **Options:** In 1999, Philip Morris, in collaboration with ventilation consultants, manufacturers and hospitality industry organizations, launched *Options*, a web-based ventilation consultation resource designed to mislead lawmakers, business owners and the public; to create the perception that ventilation can address the issue of secondhand smoke; and, therefore, to advocate that smokefree air policies are unnecessary. Its stated goal was “to help businesses that choose to allow smoking find effective, practical ways to provide comfort for both non-smoking and smoking customers. [*Options*] will help you create comfortable environments, improve ventilation and learn more about industry trends.”²⁴ In 2003, the *Options* program dissolved.
- **The Hospitality Coalition on Indoor Air Quality (HCIAQ), www.hciaq.org,** is a front group organized and funded by Philip Morris to carry its ventilation message.²⁵ Black, Kelley, Scruggs, and Healy – a Washington based public affairs subsidiary of Philip Morris’ public relations firm Burson-Marsteller – created HCIAQ in 1999.²⁶ The stated goal of HCIAQ is to: “Educate regulators and legislators at the local, state, and national levels, and general public, on the costs to the hospitality industry of one-size-fits-all IAQ regulations and legislative solutions.”²⁷ HCIAQ is comprised of representatives of tobacco industry-allied organizations in the hospitality, gambling, and ventilation fields.

LOBBY ASHRAE

“ASHRAE recently approved a standard.... The hooker is that, by designating an entire building as a ‘no smoking building’, no added expense at all would be involved.... It is mind boggling to attempt to calculate the harm that this code would have done to our company and our industry had it been adopted.”

– Bob Moore, Philip Morris (1983)

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The tobacco industry has been trying to give its ventilation “solution” the weight of law by lobbying and infiltrating ASHRAE. Currently, the tobacco companies are working with the American Gaming Association – a member²⁸ of the Philip Morris’ HCIAQ front group²⁹ – and the National Restaurant Association – a former member of HCIAQ – to lobby ASHRAE to create separate ventilation standards, which include smoking, for hospitality venues.

If smokefree opponents advocating ventilation as a solution appear in your community, contact ANR for assistance.

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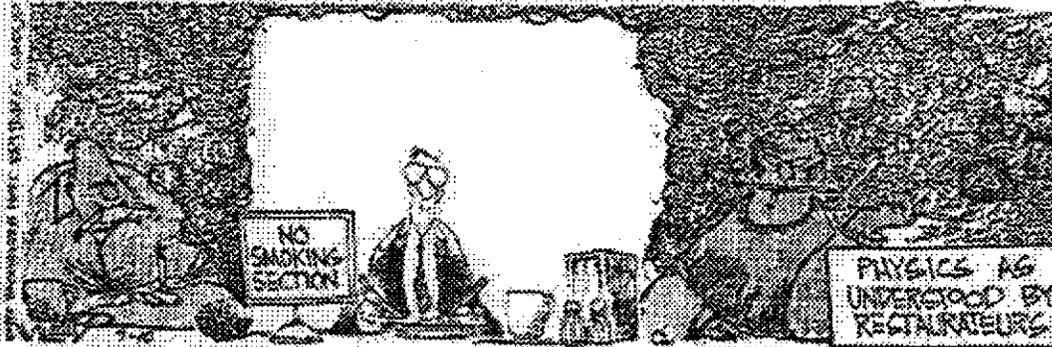
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CAMPAIGN For TOBACCO-FREE Kids®

VENTILATION TECHNOLOGY DOES NOT PROTECT PEOPLE FROM SECONDHAND TOBACCO SMOKE

NON SEQUITUR



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As this political cartoon from 1992 illustrates so well, the ventilation "solutions" to the problems posed by secondhand smoke that the tobacco industry, its allies, and others have proposed over the years fall far short of the mark of protecting the health of non-smokers.

Even though the tobacco industry has pushed ventilation technology without much success for years as a sensible, reasonable, and common sense solution to accommodate the interests and needs of both smokers and non-smokers in indoor environments¹, the industry has recently redoubled its claims that there are "new and emerging technologies" that make it unnecessary to create smoke free environments.

However, while sounding reasonable, the problem with the ventilation "solution" is that based on current scientific information, even the newest ventilation technologies under ideal conditions are incapable of removing all secondhand smoke and its toxic constituents from the air.² Therefore, the scientific evidence is clear: ventilation technology does not serve as an alternative to eliminating exposure to secondhand smoke as the best strategy to protect people's health.

While there may be the potential for reducing levels of exposure to secondhand smoke using current ventilation technology, there remains no scientific evidence or consensus about whether there is any safe level of exposure.³ And no credible scientific, medical, or engineering authority has claimed that ventilation is capable of protecting people's *health* from the toxins in secondhand smoke. Until such consensus develops (if ever), ventilation technology as a "solution" to secondhand smoke is inadequate and only laws that prohibit smoking in indoor environments can guarantee safe levels of exposure to secondhand smoke.

What does the tobacco industry say about ventilation and health?

Philip Morris U.S.A. - While the tobacco industry presents ventilation as a "solution" to the problems of secondhand smoke and urges restaurants to spend tens of thousands of dollars on complex systems that don't solve the problem of exposure to secondhand smoke, Philip Morris (in the fine print) admits that these systems do not protect health – "Options, Philip Morris USA does not purport to address health effects attributed to environmental tobacco smoke."⁴ March, 2001)

George Benda, CEO, Chelsea Group, Ltd. (ventilation consultant to Philip Morris U.S.A.) – The following quotes are taken from testimony by Mr. Benda at a Mesa, Arizona City Council hearing:

1. In response to a question about whether or not proposals for ventilation technology solutions are based on old technology (that independent government and engineering experts have concluded are incapable of removing all the harmful properties of secondhand smoke from indoor spaces), Mr. Benda stated, "... it is the same technology we've all known."⁵
2. In addition, Mr. Benda stated that building ventilation systems are designed to operate in a specific manner and that any alterations to the building could impact the effectiveness of the ventilation system. Due to these built-in design factors in all buildings, to renovate these systems in a way that even attempts to remove all secondhand smoke contaminants from the air would require every building owner to "restructure the entire building" and that such major retrofits would cost "tens of thousands of dollars."⁶ In comparison, smoke free indoor air laws are free.

What do the people who make ventilation equipment say about ventilation and health?

Honeywell, Inc. (leading industry manufacturer of ventilation products) – "We stand by the efficiency and quality of our air cleaners as comfort and convenience products, but we are not making claims that these are health products."⁷

"Q: Will filtering eliminate all health hazards known to occur with exposure to ETS?"

A: Honeywell has not in the past and does not make health hazard claims."⁸

"Q: If filtering does not eliminate all health hazards, to what degrees are those hazards reduced?"

A: Honeywell has not data to support health hazard claims."⁹

What do the experts say about ventilation technology?

Occupational Safety and Health Administration (OSHA) - "... from the industrial hygiene perspective, general ventilation as delivered by heating, ventilation and air condition (HVAC) systems, is not an acceptable engineering control measure for controlling occupational exposures to [environmental tobacco smoke] ETS."¹⁰

ASHRAE Standard 62-1999, Addendum 62e – The purpose of this standard is to "... specify minimum ventilation rates and indoor air quality that will be acceptable to human occupants ..."¹¹ and it assumes nonsmoking environments everywhere except bars and casinos.

"Since the last publication of this standard in 1989, numerous cognizant authorities have determined that ETS is harmful to human health. These authorities include, among others, the United States Environmental Protection Agency, World Health Organization, American Medical Association, American Lung Association, National Institute of Occupational Safety and Health,

National Academy of Sciences, Occupational Safety and Health Administration, and the Office of the U.S. Surgeon General."¹²

It is important to note that several tobacco companies, including R.J. Reynolds Tobacco Company and Philip Morris U.S.A., appealed various parts of the ASHRAE 62-1999, Addendum 62e standard. All of these appeals have been rejected and in a letter dated July 12, 2000, the American Standards Institute's Board of Appeals informed Philip Morris that it rejected their appeal and stated that the "ASHRAE Addendum 62e remains an approved American National Standard."¹³

U.S. Environmental Protection Agency (EPA) – "EPA recommends that every company have a smoking policy that effectively protects nonsmokers from involuntary exposure to tobacco smoke. Prohibiting smoking indoors or limiting smoking to rooms that have been specially designed to prevent smoke from escaping to other areas of the building are two options that will effectively protect nonsmokers ... If smoking is permitted indoors, it should be in a room that meets several conditions:

1. Air from the smoking room should be directly exhausted to the outside by an exhaust fan. Air from the smoking room should not be re-circulated to other parts of the building. More air should be exhausted from the room than is supplied to it to make sure ETS doesn't drift to surrounding spaces.
2. The ventilation system should provide the smoking room with 60 cubic feet per minute of supply air per smoker. This air is often supplied by air transferred from other parts of the building, such as corridors.
3. Nonsmokers should not have to use the smoking room for any purpose. It should be located in a non-work area where no one, as part of his or her work responsibilities, is required to enter."¹⁴

National Institute of Occupational Safety and Health (NIOSH) – "In indoor workplaces where smoking is permitted, [secondhand smoke] can spread throughout the airspace of all workers. The most direct and effective method of eliminating ETS from the workplace is to prohibit smoking in the workplace. Until that is achieved, employers can designate separate, enclosed areas for smoking, with separate ventilation. Air from this area should be exhausted directly outside and not re-circulated within the building or mixed with the general dilution ventilation for the building."¹⁵

Repace Associates, Inc. (secondhand smoke consultants) – "... it is clear that dilution ventilation, air cleaning, or displacement ventilation technology even under moderate smoking conditions cannot control ETS risk to *de minimis* levels for workers or patrons in hospitality venues without massively impractical increases in ventilation ... Smoking bans remain the only viable control measure to ensure that workers and patrons of the hospitality industry are protected from exposure to the toxic wastes from tobacco combustion."¹⁶

Conclusion: Based on the overwhelming body of scientific evidence:

1. ***Ventilation technology does not protect people from the dangers posed by secondhand tobacco smoke. The simplest and cheapest way to protect people from secondhand smoke is to create smoke free environments.***
2. ***States and local governments should not waste taxpayer dollars to fund new reviews to prove something to which we already know the answer.***

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**VENTILATION AND AIR FILTRATION:
WHAT AIR FILTRATION COMPANIES AND
THE TOBACCO INDUSTRY ARE SAYING**

December 2004

**COMPANIES AGREE THAT VENTILATION SYSTEMS DO NOT ELIMINATE HEALTH RISKS CAUSED BY
SECONDHAND SMOKE**

- **Allergy Control Products, Inc.:** "Allergy Control Products, Inc. does not claim that air cleaners offered in this catalog will protect people from potential health risks associated with secondhand smoke."¹
- **Allergy Buyers Club, Inc.:** "Improved ventilation and use of air purifiers may reduce, but will not completely eliminate, your exposure to secondhand smoke and the associated health risks."²
- **Brookstone:** "No air purifier can protect against the health hazards associated with secondhand tobacco smoke."³
- **Espitech Air Products:** "We make no medical or health claims whatsoever and it is not our intention to do so.... [The] goal or objective of [the] air purification systems that we sell, for use in a smoking environment, is to provide relief from the annoyance of the odour produced by tobacco smoke as well as some of the discomforts that the smoke (fumes) and odour causes. Espitech Air Products disclaims all warranties, implied or otherwise, that anyone (non-smoker or smoker) who installs our air purifiers, air cleaners, or air scrubbers as an alternative to seeking a smokefree environment will be protected from the health risks caused by exposure to second hand smoke."⁴
- **Honeywell:** "Honeywell has not in the past and does not make health hazard claims."⁵
- **IQAir North America:** "[Air filtration] doesn't remove the risk of secondhand smoke. It would reduce the amount of smoke in the air over an amount of time. In my opinion, air cleaners are not going to be a solution. Air cleaners can not reduce the initial exposure [to smoke] and that's where the risk is coming from."⁶
- **Peak Pure Air:** "Nowhere [sic] do we claim that our products eliminate all hazardous contaminants... No! ... not any product on earth will eliminate health hazards cause by exposure to second hand tobacco smoke. After one has been exposed, the damage is done.... In a perfect world we would not need to worry about secondhand tobacco smoke."⁷
- **Radio Shack:** "We make no claims that this product will protect people from second-hand smoke.... The Environizer electronic air purifiers do not eliminate such [health] hazards.... The Environizer will not help remove gases that are found in tobacco smoke."⁸
- **The Sharper Image:** "No air cleaner can protect against the harmful effects of secondhand tobacco smoke. Clean air begins with a smoke-free environment."⁹

- **Wein Products, Inc.:** “No air filtration or air purification system has been designed that can eliminate all the harmful constituents of secondhand smoke. A reduction of the harmful constituents of secondhand smoke does not protect against the disease and death caused by exposure to secondhand smoke. The U.S. Surgeon General has determined secondhand smoke to cause heart disease, lung cancer, and respiratory illness.”¹⁰

VENTILATION DOESN'T PROTECT YOUR HEALTH – THE TOBACCO INDUSTRY KNOWS IT

- **Philip Morris USA** carries a disclaimer on its web site under a section entitled “Policies, Practices and Positions – Public Place Smoking” that admits ventilation does not address health issues: “While not shown to address the health effects of secondhand smoke, ventilation can help improve the air quality of an establishment by reducing the sight and smell of smoke and by controlling smoke drift.”¹¹
- Although the Philip Morris-sponsored *atmospherePLUS*, a heating, ventilating and air conditioning consulting program, promotes “enhanc[ing] indoor air quality through ventilation,” a promotional brochure’s fine-print reads: “*atmospherePLUS* does not purport to address health effects attributed to smoking.”¹²
- The **Options**, Philip Morris USA web site stated: “Our programs are not intended to address the health effects attributed to secondhand smoke.”

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