

# Second Hand Smoking

## Introduction

I chose to research the topic on secondhand smoking because I've been around a lot of smokers for the majority of my life. As far back as I can remember, both of my parents smoked cigarettes; even while I and my two younger brothers were growing up. They weren't completely careless about it though; they didn't smoke in the car or in the house. They'd always sit out back in the corner of the yard where we played the least. Not only were my parents smokers, but I've had to deal with asthma for my entire life as well, therefore, any amount of smoke affected me. I've always been curious to learn more information to see if secondhand smoke had any sort of correlation with asthma. When I was in high school, both my parents managed to quit smoking but some of my friends picked it up by our freshman year of college. I had no vacation from the excess smoke. I was actually around secondhand smoke more now than before. I'd like to investigate further about how harmful secondhand smoke is in different places. Meaning, in the home, in the workplace, outdoors, and other areas. I'm also simply interested in gaining further information about the effects of secondhand smoke. I've also seen some headlines about third hand smoke, which I've never heard of and am now curious of. I'd like to see what short-term and long-term damages can occur to someone who doesn't even hold a cigarette up to his or her mouth.

## Section 1: Background and Problem Statement

Secondhand smoking is commonly overlooked by most people. Environmental Tobacco Smoke (ETS) or Passive Smoke is two other names used for secondhand smoking. Burning tobacco exports two kinds of smoke, sidestream and mainstream; they combine together forming secondhand smoke. Sidestream smoke is what comes directly from the end of the cigarette, cigar, or pipe. Mainstream smoke is the smoke that's exhaled from the smoker's mouth. Because ETS contains nicotine, even non-smokers that are around smokers develop higher levels of harmful chemicals in their bodies (American Cancer Society).

The most preventable cause of death in the United States is cigarette smoking. Smoking is too commonly overlooked as a lethal pastime that people don't realize that smoking results in more mortalities every year than AIDS, alcohol, cocaine, heroin, homicide, suicide, car accidents, and fires, all combined (Healthy People 2010). Studies have been able to prove that even the lowest exposure to secondhand smoke can be harmful. It's been said that eliminating smoking from indoor places would nearly eliminate the effect ETS has on people. However, that's been done in many states but it's still a problem everywhere. The only real way to avoid this problem is to completely diminish smoking around the world - a worldwide ban (National Cancer Institute).

- **Web site #1 Name:** American Cancer Society: "Secondhand Smoke"

- **Web address:**

[http://www.cancer.org/docroot/ped/content/ped\\_10\\_2x\\_secondhand\\_smoke-clean\\_indoor\\_air.asp](http://www.cancer.org/docroot/ped/content/ped_10_2x_secondhand_smoke-clean_indoor_air.asp)

- **Background Information:**

American Cancer Society (ACS) is a highly respected association providing immense amounts of information and assistance for all types of cancer. They are the nation's largest, private, non-profit source for funding the study of cancer. Specifically on the topic of tobacco use, they provide information on what exactly is bad about its consumption, where secondhand smoke is an issue, prevention of inhaling ETS, and how-to-quit tips. In ACS's big picture, they focus on funding investigator-initiated, peer-reviewed proposals, and experiment with cancer research in-house. This nationwide partnership is community-based allowing people anywhere to find help nearby their homes. Also, voluntary health organizations has been constructed concretely to remove cancer from the planet altogether. The American Cancer Society also does their best to assist in the prevention of cancer, save the lives of those who are ill, and ending all suffering through research, education, advocacy, and service. They have been collaborating with other cancer-related organizations throughout the world to exchange vital information. Their logo is, "A world with less cancer is a world with more birthdays;" their goal really is to allow people to be happy and healthy (About Us: ACS).

- **Web site #2 Name:** Healthy People 2010: "Tobacco Use"

- **Web address:** [http://www.healthypeople.gov/document/html/uih/uih\\_4.htm#tobaccouse](http://www.healthypeople.gov/document/html/uih/uih_4.htm#tobaccouse)

- **Background Information:**

Using the Leading Health Indicator from the Health People 2010 Web site, I found plenty of useful information. They didn't have specifics on secondhand smoke, but they did have a lot of discussion about the effects of tobacco; use which I managed to intertwine with my topic, nonetheless. They reported smoking (or the intake of ETS) as being a major risk factor for multiple, unwanted diseases; and luckily, they did directly point out a lot of non-smokers are directly affected, as well. Healthy People 2010 informs us that the unfortunate, involuntary intersection with secondhand smoke can potentially shorten our lifespan; even without holding a cigarette up to our mouths once. No kind of tobacco is safe; not involuntary secondhand smoking, not firsthand smoking, and not using spit tobacco. All sources of tobacco result in some sort of cancer, either to the lungs, mouth, throat, or heart disease. This public health issue is extremely habitual among adults and adolescents alike, and is now greatly affecting more of the community of non-smokers. Fortunately, the U.S. Department of Health and Human Services have compiled the public's observations and comments that are brought up in health meetings. A conclusion drawn by the Institute of Medicine and the National Academy of Sciences have provided many scientific diagrams about this single public health issue. Following and recording future advancements on the Leading Health Indicators through worldwide documentation will lead to new and helpful information for the upcoming decade. This is done to motivate and ensure more safety to the community. Hopefully one day we'll achieve the objective of a safe and healthy world (Healthy People 2010).

- **Web side #3 Name:** National Cancer Institute: "Secondhand Smoke Question and Answer (Q&A #6 and #7)"

- **Web address:** <http://www.cancer.gov/cancertopics/factsheet/Tobacco/ETS>
- **Background Information:**

Every cancer site I've visited has given me more information than I could ever read; very helpful. National Cancer Institute had a useful question-and-answer link relating to tobacco and ETS. It listed 7 commonly asked questions that everyone should be familiar with, whether they smoke or not, because it's impossible to avoid secondhand smoke. The National Cancer Institute is an organization working with the National Institutes of Health gearing towards the legitimization of the no smoking policy. The National Cancer Institute has worked with the U.S. Department of Health and Human Services' Healthy People 2010 to achieve the main goal of reducing the proportion of non-smokers exposed to secondhand smoke from 65% down to 45% by the end of this year. The National Cancer Institute also reveals that France, Ireland, New Zealand, Norway, and Uruguay are among the many nations requiring their workplaces, bars, and restaurants to be 100% smoke free for the health of everyone (National Cancer Institute).

## Section 2: Research

- **Web site #1 Name:** Pubmed: "Passive Smoking and Tuberculosis"
- **Web address:**  
[http://www.ncbi.nlm.nih.gov/pubmed/20142576?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed\\_ResultsPanel.Pubmed\\_RVDocSum&ordinalpos=2](http://www.ncbi.nlm.nih.gov/pubmed/20142576?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=2)

- **Summary of the research:**

Secondhand smoking causes a lot of health problems for almost everyone, but this Web site's research shows a new health issue I haven't yet addressed: tuberculosis (TB). Apparently, direct smoking has a relation to tuberculosis. On the other hand, secondhand smoking was also closely related to contracting TB. This study was conducted in Hong Kong and isolated about 15,500 elderly women who had been living under the same roof as smokers. They concluded that their level of secondhand smoke intake increased the likelihood of developing TB. It was also found that environmental tobacco causes lung disease (odds 95% confidence interval). Different forms of diabetes have the chance of being cultivated along with the development of tuberculosis. Passive smoking accounts for 13.7% of active tuberculosis and for 18.5% of culture-positive tuberculosis in this experiment. The main argument ending with the decision that ending tobacco use altogether is the safest route possible (PubMed).

- **Web site #2 Name:** Surgeon General: "The Health Consequences of Involuntary Exposure to Tobacco Smoke"

- **Web address:**  
<http://www.surgeongeneral.gov/library/smokeexposure/report/fullreport.pdf>

- **Summary of the research:**

The Surgeon General reports in these excerpts that ETS have extremely damaging effects, as it has been recorded on about every other Web site. This report solely focuses on children, however. Premature death and disease in children can arise from this exposure. Unborn babies are at risk for sudden infant death syndrome, lower respiratory infections, middle ear disease, and more severe asthma, respiratory

symptoms, and slowed lung growth. Children's respiratory, immune, and nervous systems are still maturing causing them to be more susceptible to secondhand smoke. On an even more unfortunate note, children aren't the ones in control of the amount of exposure to ETS because they can't be educated at such young ages; it's the parents and guardians' job to monitor the child's consumption. The amount of cotinine in the home of smokers is significantly higher than those of a non-smoker's home; this is a major factor in the development of good health in young children. The Surgeon General encourages the sooner people take action to learn the facts about ETS then the sooner their children can be informed and live healthier lives (Surgeon General).

- **Web site #3 Name:** University of Iowa Hospitals and Clinics: "Secondhand Smoke"
- **Web address:** <http://www.uihealthcare.com/topics/medicaldepartments/cancercenter/cancertips/secondhand.html>

- **Summary of the research:**

The research from this Web site is very straightforward. The information states that secondhand smoke is composed of nearly 4,000 different chemicals; 43 of them have been proven to produce cancer. Some of those chemical names are, formaldehyde, carbon monoxide, arsenic, and cyanide. Adults who are generally in smoke-filled areas are at high risk for heart attacks, strokes, and lung cancer. Lung cancer, in particular, causes 3,000 deaths in the United States each year just in non-smokers alone (Secondhand Smoke).

### Section 3: Statistics

- **Web site #1 Name:** American Academy of Otolaryngology: "Secondhand Smoking and Children"
- **Web address:** <http://www.entnet.org/HealthInformation/Second-Hand-Smoke-and-Children.cfm>

- **Summary of the statistics:**

According to this Web site, in America, only 26 percent of adults are current smokers. More importantly, about 50 to 60% of children less than 5 years old currently live under the same roof with a parental smoker. Parents who smoke at least half a pack per day or more put their children at double the risk of respiratory illness, compared to those who don't live with parents who smoke. A study conducted on children under a year and a half old by the Environmental Protection Agency states, ETS has the potential to cause 150-300 thousand lower respiratory tract infections each year; which adds up to about 15 thousand hospital visits. Although there is no direct relation to secondhand smoking, behavioral problems (hyperactivity) have been documented as more likely in children whose mothers smoked while pregnant. Also, environmental tobacco smoke can raise the risk of developing cancer to 100 times greater than other outdoor contaminants. Unfortunately, secondhand smoking has been known to result in 3,000 non-smokers deaths per year; and this is because it's too difficult to control the amount of ETS people take in on their daily excursions. This research demonstrates how children are at higher risks than a lot of people since they do not know what is being

done to their bodies, nor have the ability to control it (Secondhand Smoking and Children).

- **Web site #2 Name:** Healthy People 2010: “Tobacco Use”

- **Web address:**

<http://www.healthypeople.gov/Data/2010prog/focus27/2008focus27.pdf>

- **Summary of the statistics:**

According to the U.S. Department of Health and Human Services informs 45.3 million adults smoke. Over the past forty years, 12 million deaths are attributed to ETS. Of those unfortunate mortalities, 4.1 million of those deaths were respiratory disease, and 94,000 infant deaths from their mothers smoking while being pregnant. This Web site refers to the health toll as being a “tremendous economic burden,” which allowed for more than \$96 billion spent on medical expenses, annually (Healthy People 2010).

There is no difference in statistics between racial and ethnic groups whatsoever. The likelihood of developing an illness from secondhand smoke remains the exact same for every person in the world; American Indians/Alaska Natives, non-Hispanic blacks, non-Hispanic whites, Hispanics, and Asians were all included in this documentation. The number of adults, those over 21, who smoke has decreased over the past twenty years to only 21 percent in the year 2006; and the goal for 2010 is to lower the percentage down to 12 percent nationwide. About 45 years ago, men were 17 percent more likely to smoke cigarettes than women. However, about 20 years later, the average percentage of men who smoked dropped more rapidly than for women; even though the men's percentile was still a little higher than for women. Luckily, this information shows that the lower the percentages are of people smoking, generally, the less ETS children are being exposed to (Healthy People 2010).

- **Web site #3:** Tobacco-Related Disease Research Program: “Asthma, Gender, and ETS; Pathogenic Synergy”

- **Web address:**

[http://www.trdrp.org/fundedresearch/Views/Grant\\_Page.asp?grant\\_id=4046](http://www.trdrp.org/fundedresearch/Views/Grant_Page.asp?grant_id=4046)

- **Summary of the statistics:**

Asthma has been proven to appear more frequently in woman than men. A study conducted by the Tobacco-Related Disease Research Program (TRDRP) using mouse models, reveals environmental tobacco smoke has an extreme effect on inducing allergic asthma attacks. This study demonstrates how females exposed to ETS are more likely to have an allergic reaction than males who are exposed to secondhand smoke. This study reveals that humans have progesterone receptors on mast cells in their airways. Inside these airways, various mediators of allergic asthma can be released. The TRDRP study concludes that female hormones have some sort of reaction when they come into contact with secondhand smoke, causing adult females to have a higher risk of an asthma attack. TRDRP also proved that those women consuming any kind of progesterone based hormone therapy (hormonal altering birth control) are more susceptible to having difficulties with their asthma when around secondhand smoke. The goal of this particular study was to provide some answers, a

link between ETS and asthma, and how it is specifically related to women. The only thing that has been recommended to asthmatics is to keep away from secondhand smoke, although that is a difficult task for anyone (TRDRP).

#### **Section 4: Consumer Information**

- **Web site #1 Name:** Medline Plus: “Secondhand Smoke”
- **Web address:**  
<http://www.surgeongeneral.gov/library/secondhandsmoke/secondhandsmoke.pdf>
- **Summary of the information:**

This Web site covers nearly all the effects caused by secondhand smoke and also gives some direction on how to handle and avoid these problems. In America, a lot of states or selected communities have made the decision to pass smoke-free laws. These laws don't permit smoking inside public buildings; most well-known example is restaurants. However, the “no smoking” sections do very little to lessen the amount of ETS hovering in the air; same goes for opening a window (does little to reduce ETS). Unfortunately, a lot of people continue to breathe in ETS each day in these places and other locations. A few ways people take in ETS on a regular basis without realizing it, as well as while eating in “no smoking” sections, just because it doesn't always smell like smoke doesn't mean it isn't lingering in the air unknowingly. Being in the car with someone who is smoking, regardless of whether or not the window is open or cracked. Being inside a house or building where someone is smoking, even if you're in a different room or different floor. And finally, working in a company, even with ventilation systems, where others smoke indoors; most common are restaurants, and warehouses (Medline Plus).

- **Web site #2 Name:** U.S. Food and Drug Administration: “Federal and State Efforts on Tobacco”
- **Web address:** <http://www.fda.gov/NewsEvents/Testimony/ucm109873.htm>
- **Summary of the information:**

This national Web site discusses that Federal Government's interception on tobacco. The U.S. Food and Drug Administration (FDA) has intercepted the tobacco industry slightly in order to reduce the use of tobacco. Health and Humans Services has departments specifically assigned to the public health problem. The FDA has achieved one of many goals, one of which is nicotine replacement. This goal was designed to diminish the use of tobacco in order to protect the entire population. They came up with many over-the-counter and prescription products such as bupropion, varenicline, nicotine gum, and nicotine patches to help smokers take control. The states have anonymously agreed to adopt laws preventing the sales of tobacco to anyone eighteen years old or younger. Not only that, but many prohibit smoking in public areas, too. And a lot of local health departments advocate for the government by providing proper, safe educational information about the prevention of smoking. The unfortunate side to the government's story is that tobacco continues to take the lives of hundreds of thousands of lives each year (FDA).

- **Web site #3 Name:** Smoke Free: “Secondhand Smoke”
- **Web address:** [http://www.smokefree.gov/topic-secondhand\\_smoke.aspx](http://www.smokefree.gov/topic-secondhand_smoke.aspx)

- **Summary of the information:**

Because ETS is the mixture of smoke burning from the end of the cigarette and the smoke exhaled by the smoker, more people are at risk as it lingers in the air. Almost anywhere you go, in a public or private location, there's a very good chance you're breathing in secondhand smoke from somewhere nearby. Because ETS is virtually impossible to avoid and no amount is safe, that makes it very dangerous. Being in a dingy, smoke-filled for a limited amount of time can be physically destructive. Inhaling secondhand smoke for the shortest amount of time is harmful to your body, however, over longer periods of time it can introduce many different diseases and death in children and adults alike whether they smoke or not. There are no less than 50 chemicals in cigarettes that undoubtedly cause cancer. Secondhand smoke causes lung cancer even in those who have never smoked a cigarette in their lives. Mothers are at risk for giving birth to babies a5 ½ pounds or less if they inhale ETS along the duration of their pregnancy; because these babies are smaller and weaker, they're at higher risk for many serious health issues. Parents who smoke make it possible for their children to acquire bronchitis, pneumonia, lung problems, excessive coughing, too much phlegm, wheezing, breathlessness, and ear infections (sometimes resulting in need of surgery in order to drain their ears). Also, if children have asthma and are exposed to secondhand smoke, they will have more severe asthma attacks and more often (Smoke Free).

## **Section 5: Solutions to the Problem (or Issue)**

- **Web site #1 Name:** Journal of the National Cancer Institute: "Surgeon General's Report Heralds Turning Tide Against Tobacco, Smoking"
- **Web address:** <http://jnci.oxfordjournals.org/cgi/content/full/98/19/1360>
- **Summary of the information:**

The U.S. Surgeon General reported that secondhand smoke is a serious health hazard to the public that can potentially lead to disease and premature death in children and adults. This led to multiple new smoking bans which smoke-free advocates see as being the hopeful start of a national transition to a healthier world. Anti-tobacco promoters continue to advocate for the progress of state and governmental regulations, which are putting an end to smoking in workplaces, restaurants, and bars. Because nonsmokers have a risk of 20%-30% more chance of developing lung cancer from ETS, it's also to blame for the 3,000 lung cancer deaths each year. While secondhand smoke is constantly loitering in the air, cardiovascular disease, breast cancer, and cervical cancer could be producing in anyone's body. Evidence that ETS kills is still continuing to escalate. The Surgeon General determines, "smoke-free environments are the only approach that effectively protects nonsmokers from the dangers of secondhand smoke." This statement contributed to multiple changes across the nation; restaurants, bars, Marriott-owned facilities in North America set up separate, nonsmoking rooms. The Surgeon General also stated that they've stepped up their strategies, and leading by example. They've tried to create a smoke-free environment by supporting not smoking and setting up "how to quit smoking" hotlines, and currently developing new and improved ideas of advocating. As of right now, 33 states have officially adopted smoke-

free laws stopping smoking in workplaces, restaurants, and bars; this covers 44.5% of the entire U.S. population (Journal of the National Cancer Institute).

- **Web site #2 Name:** IAQ Tribal Partners Program: “In the Spotlight”
- **Web address:** <http://www.epa.gov/iaqtribal/smoke.html>
- **Summary of the information:**

The IAQ Tribal Partners Program has developed the Northern Plains Tobacco Prevention Project in order to end tobacco use and secondhand smoke exposure. They've made this possible because the Aberdeen Area Tribal Chairmen's Health Board (AATCHB) has been raising awareness about the effects of tobacco use on American Indians from North Dakota, South Dakota, Nebraska, and Iowa. Their crusade discusses the consequence of not vanquishing smoking. They believe that ETS and any other contact with tobacco smoke are very risky to everyone's health. Their Web site contains links for anyone interested in learning more about the effects or tactics for quitting smoking. These links are incredibly helpful because they break the United States down into each state. From there, the reader can easily find out facts specifically about their own community. For example, the Web site grades each state on the use of tobacco taxes, the amount of smoke-free air, money spent on programs to end smoking, and cessation coverage. In reference to Connecticut, they have an A in Tobacco Tax, a C in Smoke Free Air, and two F's in Program Spending and Cessation Coverage. These grades are interactive and change as the states make changes within themselves; this Web site is extremely useful (In the Spotlight).

- **Web site #3 Name:** Action on Smoking and Health: “Smoking and the Public Health White Paper”
- **Web address:** [http://www.ash.org.uk/ash\\_q7iin6yq.htm](http://www.ash.org.uk/ash_q7iin6yq.htm)
- **Summary of the information:**

Action on Smoking and Health is a Web site from the UK dedicated to the end of tobacco use in all public areas. It's an interactive Web site discussing different options the government has the ability to take to make a difference; but no options permit a total ban on smoking. The first of four options is National legislation ending smoking in all workplaces on the Irish model and permitting extended restraint on smoking in the hospitality sector in certain workplaces. The second option is legislation giving local or regional councils the power to put a stop to smoking in the workplace and enclosed public areas; just like in the United States. Thirdly, legislation ending smoking in most workplaces and enclosed public areas, with exceptions for particular areas such as pubs; just like the Netherlands. And finally, the fourth option would allow for a continuation of the “voluntary approach” to quit smoking in any workplaces and public locations. These options aren't looked at as positive to those in the business industry. This is because large employers in the hospitality sector, such as restaurant and hotel chains want to have the same rules at each of their hotels and restaurants in different towns and regions. On the other hand, the “voluntary approach” to smoking restrictions hasn't been known to work very well. The “Smoking Kills” White Paper in 1998 found most people were against secondhand smoking. Their Department of Health's trade leaders concluded that 50% of pubs and half of the members of the Restaurant Association should be under the rules of the Charter Compliant. This would insist they

restrict smoking to specified locations and have ventilation in their buildings, too; however, only 22% of these locations followed that law and 1% banned smoking altogether (Action on Smoking and Health).

These planned options for the reduction of tobacco use and secondhand smoke are smart, however, not a direct replacement for smoking. It is believed that more use of celebrities advertising for no smoking, ending smoking in hospitals as a whole, and finally, a “negative licensing” course of action for producers who discretely allow minors to purchase cigarettes (such as losing their sales license). The British Hospitality Association states that the Government has, “only two feasible options: continue with the voluntary approach or legislate for a total ban on smoking in workplaces (as in Ireland, Norway, and Sweden)” (Action on Smoking and Health).

This Web site provides charts and graphs displaying the number of smokers around their community. It informs people on the amount of secondhand smoke in the workplace and open, public locations by posting links to other informative Web sites that promote the “no smoking” slogan. However, because the government hasn't been getting too involved in the “no smoking” campaign in the UK, it's mostly been left up to the “voluntary approach” which today, is beginning to pay off. About 97% of public locations have put an end to smoking in public areas. But surveys continue to show a total smoking ban is desperately needed all over the world (Action on Smoking and Health).

### **Conclusions:**

From this paper, I've learned that secondhand smoking is a lot more dangerous than many people thought and that everyone breathes it in on a regular basis; this is scary to me. I also learned that because I was around secondhand smoke while I was growing up, my asthma has most likely been worsened. The effects of secondhand smoking have been referred to as “The Tobacco Holocaust” which easily demonstrates exactly how unknowingly ETS can be. There is no safe exposure level to secondhand smoke but it is also close to impossible to avoid. I learned that just because the air isn't visibly smoky doesn't mean you're not inhaling secondhand smoke. Also, I was surprised to find out how many different sicknesses, diseases, and forms of cancer, secondhand smoking can cause.

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