

Health Effects of Secondhand Smoke Exposure

Surgeon General's Report Overview

In June 2006, the Centers for Disease Control and Prevention issued "A Report of the Surgeon General: The Health Consequences of Involuntary Exposure to Tobacco Smoke." The last comprehensive review of this evidence by the Department of Health and Human Services (DHHS) was in the 1986 Surgeon General's report; "The Health Consequences of Involuntary Smoking." This report updated the evidence of the harmful effects of involuntary exposure to tobacco smoke. ^{i ii}

<http://www.surgeongeneral.gov/library/secondhandsmoke/report/>

Six Major Conclusions of the 2006 Surgeon General's Report

1. Secondhand smoke causes premature death and disease in children and in adults who do not smoke.
2. Children exposed to secondhand smoke are at an increased risk for sudden infant death syndrome (SIDS), acute respiratory infections, ear problems, and more severe asthma. Smoking by parents causes respiratory symptoms and slows lung growth in their children.
3. Exposure of adults to secondhand smoke has immediate adverse effects on the cardiovascular system and causes coronary heart disease and lung cancer.
4. The scientific evidence indicates that there is **no safe level** of exposure to secondhand smoke.
5. Millions of Americans, both adults and children, are still exposed to secondhand smoke in their homes and workplaces despite substantial progress in tobacco control.
6. Eliminating smoking in indoor spaces fully protects nonsmokers from exposure to secondhand smoke. Separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate exposures of nonsmokers to secondhand smoke.

Health Effects Brief ⁱⁱⁱ

Lung cancer:

- Secondhand smoke is similar to the mainstream smoke inhaled by smokers in that it contains harmful chemicals including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine.
- Secondhand smoke is a known human carcinogen^{iv} and contains more than 50 chemicals that can cause cancer.
- Concentrations of many of these chemicals are potentially higher in secondhand smoke than in the smoke inhaled by smokers.

Respiratory effects:

- Secondhand smoke contains many chemicals that can quickly irritate and damage the lining of the airways.
- Even brief exposure can trigger respiratory symptoms, including coughing, phlegm, wheezing, and breathlessness.
- Brief exposure to secondhand smoke can trigger an asthma attack in children and adults with asthma.
- People who already have asthma or other respiratory conditions are at especially high risk for being affected by secondhand smoke, and should take special precautions to avoid secondhand smoke exposure.

Heart disease:

- Exposure to SHS can trigger a heart attack in someone with heart disease or risk factors for heart disease. The Centers for Disease Control and Prevention (CDC) states, "...all patients at risk of coronary heart disease or with known coronary artery disease should be advised to avoid all indoor environments that permit smoking".
- A study in Helena, Montana showed a 43% decrease in admissions for heart attack to the local hospital after a city-wide smoking ban was implemented. Admissions rates for heart attack increased to previous levels when the ban was rescinded, suggesting exposure to SHS may cause heart attacks. Other studies have shown similar results.^v
- A University of California, San Diego study shows that "California's 40 year-long tobacco control program has resulted in lung cancer rates that are nearly **25 percent lower** than other states."^{vi}
- Breathing secondhand smoke for even a short time can have immediate adverse effects on the cardiovascular system, interfering with the normal functioning of the heart, blood, and vascular systems in ways that increase the risk of heart attack.
- Even a short time in a smoky room can cause your blood platelets to become stickier, damage the lining of blood vessels, decrease coronary flow velocity reserves, and reduce heart rate variability.
- People who already have heart disease are at especially high risk of suffering adverse affects from breathing secondhand smoke, and should take special precautions to avoid even brief exposure.

SIDS (sudden infant death syndrome) and other health consequences in infants and children:

- Smoking by pregnant women has been known for some time to cause SIDS.
- Infants who are exposed to secondhand smoke after birth are at a greater risk of SIDS.
- Children exposed to secondhand smoke are at an increased risk for lower respiratory infections such as pneumonia and bronchitis,
- Secondhand smoke exposure increases the prevalence of fluid in the middle ear, a sign of chronic middle ear disease.
- Secondhand smoke exposure increases the frequency of episodes and severity of symptoms in asthmatic children.
- Secondhand smoke exposure is a risk factor for new cases of asthma in children who have not previously displayed symptoms.
- Pregnant women who are exposed to secondhand smoke are more likely to have lower birth weight babies.

No Safe Levels of Exposure

Separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate secondhand smoke exposure.

- The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), the preeminent U.S. standard-setting body on ventilation issues, has concluded that ventilation technology cannot be relied on to completely control health risks from secondhand smoke exposure.^{vii}
- Conventional air cleaning systems can remove large particles, but not the smaller particles or the gases found in secondhand smoke.
- Operation of a heating, ventilating, and air conditioning system can distribute secondhand smoke throughout a building.

*Information contained on this highlight sheet has been taken directly from *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. For more information, please refer to the *Resources and How to Protect Yourself and Your Loved Ones from Secondhand Smoke* highlight sheets. Additional highlight sheets are also available at www.cdc.gov/tobacco.*

ⁱ Executive Summary Available:

<http://www.surgeongeneral.gov/library/secondhandsmoke/report/executivesummary.pdf>

ⁱⁱ Full Report Available:

<http://www.surgeongeneral.gov/library/secondhandsmoke/report/>

ⁱⁱⁱ <http://www.surgeongeneral.gov/library/secondhandsmoke/factsheets/factsheet7.html>

^{iv} Respiratory health effects of passive smoking: lung cancer and other disorders; EPA/600/6-90/006 F. 1993. Summary available: <http://www.epa.gov/smokefree/pubs/strsfs.html>

^v Sargent, RP, et al. Reduced incidence of admissions for myocardial infarction associated with public smoking ban: before and after study. *BMJ*, 328:977-980. 2004.

^{vi} University of California San Diego Healthy System. California's Leadership in Tobacco Control Results in Lower Lung Cancer Rate. Accessed January 12, 2011. <http://health.ucsd.edu/news/2010/9-28-tobacco-control-results.htm>

^{vii} American Society of Heating, Refrigerating, and Air Conditioning Engineers. Environmental Tobacco Smoke: Position Document. Atlanta, Georgia: 2005 [cited 2006 Oct 23].