



## Fact Sheet: Secondhand Smoke (SHS)

### Definition

Secondhand smoke—also known as environmental tobacco smoke—is a mixture of gases and fine particles that includes—

- Smoke from a burning cigarette, cigar, or pipe tip
- Smoke that has been exhaled or breathed out by the person or people smoking
- At least 250 toxic chemicals, including more than 50 that can cause cancer<sup>1</sup>

Most exposure to secondhand smoke occurs in homes and workplaces.<sup>2</sup> Secondhand smoke exposure also continues to occur in public places such as restaurants and bars and in private vehicles.<sup>2</sup>

### Health Effects: Children

**In children, secondhand smoke causes—**

- Ear infections
- More frequent and severe asthma attacks
- Respiratory symptoms (e.g., coughing, sneezing, shortness of breath)
- Respiratory infections
- A greater risk for sudden infant death syndrome (SIDS)<sup>2</sup>

**In U.S. children aged 18 months or younger, secondhand smoke exposure is responsible for an estimated—**

- 150,000–300,000 new cases of bronchitis and pneumonia each year
- 7,500–15,000 hospitalizations annually<sup>3</sup>

### Health Effects: Adults

**In adults who have never smoked, secondhand smoke can cause—**

- Heart disease and/or

- Lung cancer<sup>2</sup>

## Heart Disease

- For nonsmokers, breathing secondhand smoke has immediate harmful effects on the cardiovascular system that can increase the risk for heart attack. People who already have heart disease are at especially high risk.<sup>2,4</sup>
- Nonsmokers who are exposed to secondhand smoke at home or work increase their heart disease risk by 25–30%.<sup>2</sup>
- Secondhand smoke exposure causes an estimated 46,000 heart disease deaths annually among adult nonsmokers in the United States.<sup>5</sup>

## Lung Cancer

- Nonsmokers who are exposed to secondhand smoke at home or work increase their lung cancer risk by 20–30%.<sup>2</sup>
- Secondhand smoke exposure causes an estimated 3,400 lung cancer deaths annually among adult nonsmokers in the United States.<sup>5</sup>

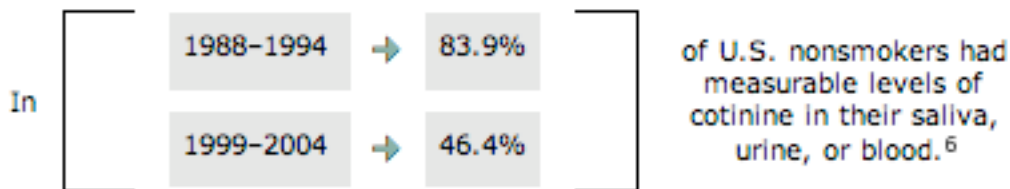
**There is no risk-free level of contact with secondhand smoke; even brief exposure can be harmful to health.<sup>2</sup>**

## Estimates of Secondhand Smoke Exposure

When a nonsmoker breathes in secondhand smoke, the body begins to metabolize or break down the nicotine that was in the smoke. During this process, a nicotine byproduct called cotinine is produced. Exposure to nicotine and secondhand smoke can be measured by testing saliva, urine, or blood for the presence of cotinine.<sup>2</sup>

**Progress in reducing secondhand smoke has been made in the United States.**

- Measurements of cotinine have shown how exposure to secondhand smoke has steadily decreased in the United States over time.



- These measurements show how cotinine levels in nonsmokers who were exposed to secondhand smoke fell by 44.7% from 1988 to 2004.<sup>6</sup>

**The decrease in exposure to secondhand smoke is due to the growing number of laws that ban smoking in work and public places and because many public health groups have made nationwide efforts to reduce smoking in homes.<sup>7,8</sup>**

**Despite progress in reducing secondhand smoke exposure in the United States, serious risks still exist.**

- More than 126 million nonsmokers in the United States continue to be exposed to secondhand smoke in homes, vehicles, workplaces, and public places.<sup>2</sup>
- Children, in particular, are at risk for exposure to secondhand smoke: an estimated 60% of U.S. children are exposed to secondhand smoke.<sup>2</sup>
- While only 7% of adult nonsmokers in the United States live with at least one smoker, approximately 25% of U.S. children live with at least one smoker.<sup>2</sup>

## **Disparities in Secondhand Smoke Exposure**

### **African Americans**

- While declines in cotinine levels have occurred in all racial and ethnic groups, cotinine levels have consistently been found to be higher in African Americans than in whites and Mexican Americans.<sup>6,7,8</sup>

### **Low Income**

- Secondhand smoke exposure, both overall and in the home, tends to be higher for persons with lower incomes.<sup>2,6</sup>

### **Occupational Disparities**

- Occupational disparities in secondhand smoke exposure decreased over the past two decades, but substantial differences in exposure among workers remain. African-American workers, construction workers, and blue collar workers are among some of the groups who continue to experience particularly high levels of secondhand smoke exposure relative to other workers.<sup>9</sup>

**Eliminating smoking in indoor spaces is the only way to fully protect nonsmokers from secondhand smoke exposure. Separating smokers from nonsmokers, cleaning the air, and ventilating buildings does not eliminate secondhand smoke exposure.<sup>2</sup>**

## References

1. National Toxicology Program. **11th Report on Carcinogens, 2005** . (PDF–1.7 MB) Research Triangle Park (NC): U.S. Department of Health and Human Sciences, National Institute of Environmental Health Sciences, National Toxicology Program, 2000 [accessed 2010 Jan 15].
2. U.S. Department of Health and Human Services. **The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General**. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006 [accessed 2010 Jan 14].
3. United States Environmental Protection Agency. **Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders** . Washington: U.S. Environmental Protection Agency, Office of Research and Development, Office of Health and Environmental Assessment, 1992 [accessed 2010 Jan 14].
4. Institute of Medicine. **Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence** . Washington: National Academy of Sciences, Institute of Medicine, 2009 [accessed 2010 Jan 14].
5. Centers for Disease Control and Prevention. **Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses—United States, 2000–2004**. Morbidity and Mortality Weekly Report 2008;57(45):1226–1228 [accessed 2010 Jan 15].
6. Centers for Disease Control and Prevention. **Disparities in Secondhand Smoke Exposure—United States, 1988–1994 and 1999–2004**. Morbidity and Mortality Weekly Report 2008;57(27):744–747 [accessed 2010 Jan 14].
7. Pirkle JL, Bernert JT, Caudill SP, Sosnoff CS, Pechacek TF. **Trends in the Exposure of Nonsmokers in the U.S. Population to Secondhand Smoke: 1988–2002** . Environmental Health Perspectives 2006;114(6):853–858 [accessed 2010 Jan 14].
8. Centers for Disease Control and Prevention. **Fourth National Report on Human Exposure to Environmental Chemicals** . (PDF–1.7 MB) Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Environmental Health, 2009 [accessed 2010 Jan 14].
9. Arheart KL, Lee DJ, Dietz NA, Wilkinson JD, Clark III JD, LeBlanc WG, Serdar B, Fleming LE. **Declining Trends in Serum Cotinine Levels**

**in U.S. Worker Groups: The Power of Policy.** Journal of Occupational and Environmental Medicine 2008;50(1):57–63 [cited 2010 Jan 13].

## For Further Information

Centers for Disease Control and Prevention  
National Center for Chronic Disease Prevention and Health Promotion  
Office on Smoking and Health  
E-mail: [tobaccoinfo@cdc.gov](mailto:tobaccoinfo@cdc.gov)  
Phone: 1-800-CDC-INFO

Media Inquiries: Contact CDC's Office on Smoking and Health press line at 770-488-5493.