

## What is Secondhand Smoke?

- Secondhand smoke (SHS), also known as environmental tobacco smoke (ETS), is a mixture of smoke given off by the burning end of cigarettes, pipes, or cigars, and smoke exhaled from the lungs of smokers which can be involuntarily inhaled by nonsmokers.<sup>1</sup>
- In 1986, the U.S. Surgeon General concluded that SHS is a major health risk to nonsmokers.<sup>1</sup> In 1992, SHS was classified as a Group A carcinogen, which is known to cause cancer in humans.<sup>2</sup> In 2006, the Surgeon General concluded that there is no safe level of exposure to SHS.<sup>3</sup>
- SHS contains over 4000 chemical compounds including formaldehyde, cyanide, arsenic, carbon monoxide, methane, and benzene. Among the chemicals identified in cigarette smoke, 11 are known human carcinogens.<sup>4</sup>
- Some of the toxic substances contained in secondhand smoke include arsenic (used in pesticides), lead (formerly found in paint), chromium (used to make steel), and cadmium (used to make batteries).<sup>3</sup>

## Prevalence of Secondhand Smoke Exposure

- In a 2008 nationally-representative survey of adults, 8.6% of parents reported that their children were exposed to secondhand smoke in their home within the seven days prior to the survey.<sup>5</sup>
- In the same survey, 4.8% of parents reported that their children were exposed to secondhand smoke in their car within the seven days prior to the survey.
- In 2003, for 82% of the youth who live with a smoker, that smoker was a parent. In the same year, about 5.6 million youth lived in a household with at least one parent who smoked, and of these youth, 1.3 million lived in a household with two smoking parents.<sup>5</sup>

## Impact of Secondhand Smoke

### Infants and Children

- o SHS exposure can be particularly damaging for infants and children, whose respiratory rates are higher than those of adults.<sup>6</sup>
- o SHS contributes to increased risk of lower respiratory illnesses, middle ear infections, cough and wheeze, and persistent adverse effects on lung function across childhood.<sup>3</sup>
- o Maternal smoking during pregnancy and exposure to secondhand smoke in infancy doubles the risk of Sudden Infant Death Syndrome (SIDS)<sup>7</sup> and contributes to low birth weight.<sup>3</sup>
- o SHS exposure presents an increased severity of symptoms in children with asthma. It increases the number of symptomatic days and the use of healthcare services, including hospitalizations.<sup>8</sup>

### Adults

- o Among adults, SHS exposure causes approximately 50,000 deaths a year.<sup>9</sup>
- o SHS exposure is responsible for about 3,400 lung cancer deaths of U.S. nonsmokers annually. Approximately 46,000 deaths from cardiovascular disease are attributable to SHS exposure each year.<sup>10</sup>

## Secondhand Smoke Policies

In addition to protecting against SHS exposure, studies indicate that smoke-free homes and workplaces encourage smokers to quit and reduce the number of cigarettes consumed per day.

### In the Home

- o The home is the place where children are most exposed to SHS and a major location of SHS exposure for adults.<sup>3</sup>
- o Exposure to SHS tends to be greater for persons with lower incomes.<sup>3</sup>
- o Having rules about not smoking in the home can substantially reduce health risks to children who live with smokers.<sup>1</sup> Household bans on smoking have proven to reduce SHS exposure in adolescents who live with a smoker by 92%.<sup>12</sup>
- o While 60% of children report that smoking is not allowed in their home, only 32% of children who live with a smoker report smoking bans at home. Household smoking bans are least common where they are able to benefit most.<sup>13</sup>

## In the Workplace

- o The Surgeon General has concluded that smoke-free workplace policies are the only effective means to eliminate secondhand smoke exposure in the workplace. Separating smokers from nonsmokers, cleaning the air, and ventilating buildings will not eliminate exposure.<sup>3</sup>
- o In 2001-02, about 30 percent of indoor workers in the United States were not covered by smoke-free workplace policies, down from 54 percent in 1992-93.<sup>14</sup>

## SOURCES

<sup>1</sup>U.S. Department of Health and Human Services. 1986. *The Health Consequences of Involuntary Smoking. A Report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Health Promotion and Education, Office on Smoking and Health.

<sup>2</sup>U.S. Environmental Protection Agency (EPA). 1992. *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders.* EPA/600/6-90/006F. Washington, DC: U.S. Environmental Protection Agency, Office of Air and Radiation.

<sup>3</sup>U.S. Department of Health and Human Services. 2006. *The Health Consequences of Involuntary Exposure to Tobacco Smoke. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

<sup>4</sup>U.S. Department of Health and Human Services, 2005. *Report on Carcinogens, Eleventh Edition;* U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program.

<sup>5</sup>McMillen R. *The National Social Climate of Tobacco Control, 2008.* Mississippi State University, American Academy of Pediatrics, Social Science Research Center, Mississippi State, MI. 2009.

<sup>6</sup>Davis, R.M. 1998. "Exposure to Environmental Tobacco Smoke". *Identifying and Protecting Those at Risk.* *Journal of the American Medical Association* 280:1947-1949.

<sup>7</sup>Anderson, H.R. and D.G. Cook. 1997. "Health Effects of Passive Smoking-2: Passive Smoking and Sudden Infant Death Syndrome: Review of the Epidemiological Evidence". *Thorax* 52:1003-1009

<sup>8</sup>California Environmental Protection Agency. 2005. *Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant. Part B: Health Effects.* Sacramento (CA): California Environmental Protection

<sup>9</sup>Glanz, S.A. and W.W. Parmley. 1995. "Passive Smoking and Heart Disease: Mechanisms and Risk". *Journal of the American Medical Association* 273(13): 1047-1053.

<sup>10</sup>CDC. *Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses—United States, 2000-2004.* *MMWR* 2008; 57(45): 1226-1228.

<sup>11</sup>Farkas, A.J., E.A. Gilpin, J.M. Distefan, and J.P. Pierce. 1999. "The Effects of Household and Workplace Smoking Restrictions on Quitting Behaviors." *Tobacco Control* 8(3):261-265.

<sup>12</sup>Biener, L., D. Cullen, Z.X. Di, and S.K. Hammond. 1997. "Household Smoking Restrictions and Adolescents' Exposure to Environmental Tobacco Smoke." *Preventive Medicine* 26:358-363.

<sup>13</sup>Farrelly, M.C., J. Chen, K.Y. Thomas, and C.G. Heaton. 2001. *Legacy First Look Report 6: Youth Exposure to Environmental Tobacco Smoke.* Washington, DC: American Legacy Foundation.

<sup>14</sup>Shopland, D.R., K.K. Gerlach, D.M. Burns, A.M. Hartman, and J.T. Gibson. 2001. "State-Specific Trends in Smoke-Free Workplace Policy Coverage: The Current Population Survey Tobacco Use Supplement, 1993 to 1999". *Journal of Occupational and Environmental Medicine* 43: 680-686.