

ASTHMA AND SECONDHAND SMOKE, VIRGINIA

Definition of Secondhand Smoke

Secondhand smoke or environmental tobacco smoke (ETS) also known as passive smoke is a mixture of two forms of smoke from burning tobacco products including the followings:

- **Side stream smoke:** smoke that comes from the end of a lighted cigarette, pipe, or cigar
- **Mainstream smoke:** smoke that is exhaled by a smoker

While nonsmokers are exposed to secondhand smoke, it is called *involuntary smoking* or passive smoking. Nonsmokers exposed to secondhand smoke absorb nicotine and other toxic chemicals just like smokers. The greater the exposure to secondhand smoke, the level of these harmful chemicals in the body is elevated. Avoiding secondhand smoke is not easy because about one in four people smoke in the United States. According to the U.S. Environmental Protection Agency (EPA), the US National Toxicology Program, and the International Agency for Research on Cancer (IARC) secondhand smoke is categorized as a "known human carcinogen" (cancer-causing agent).¹

Secondhand smoke contains more than 250 chemicals known to be toxic or carcinogenic including formaldehyde, benzene, vinyl chloride, arsenic, ammonia, and hydrogen cyanide. Some of the health risks related to secondhand smoke include cancer, respiratory infections, asthma, ear infections, sudden infant death syndrome (SIDS), and low birth weight infants.

According to the current Surgeon General's report, there is no safe level of secondhand smoke exposure. Brief exposures to secondhand smoke can cause blood platelets to become stickier, damage the lining of blood vessels, decrease coronary flow velocity reserves, and reduce heart rate variability, potentially increasing the risk of a heart attack. Secondhand smoke contains many chemicals that can quickly irritate and damage the lining of the airways. Short exposure can result in upper airway changes in healthy persons and can lead to more frequent asthma attacks in children who already have asthma.²

Secondhand Smoke in the United States

- More than 126 million nonsmoking Americans continue to be exposed to secondhand smoke in homes, vehicles, workplaces, and public places.³
- Exposure to nicotine and secondhand smoke is measured by testing the saliva, urine, or blood for the presence of a chemical called cotinine. Cotinine is a byproduct of nicotine metabolism, and tobacco is the only source of this marker.³

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- Most exposure to tobacco smoke occurs in homes and workplaces.³
- Almost 60% of U.S. children aged 3-11 years or almost 22 million children are exposed to secondhand smoke.³
- About 25% of children aged 3-11 years live with at least one smoker, compared to only about 7% of nonsmoking adults.³
- ETS exposure is associated with increased episodes and severity of symptoms in children with asthma. An estimated 200,000 to 1,000,000 children with asthma have their condition worsened by exposure to ETS.⁴
- ETS exposure is a risk factor for new cases of asthma in children who have not previously displayed symptoms.⁴
- More than 40% of children who go to the emergency room for asthma live with a smoker. A severe asthma attack can put a child's life in danger.⁵
- Approximately 30% of indoor workers in the United States are not covered by smoke-free workplace policies.²
- Exposure to ETS is higher and asthma prevalence in children is more likely in households with low income and low education levels.⁶
- Secondhand smoke exposure is associated with increased respiratory-related school absenteeism among children, especially those with asthma.⁷

Secondhand Smoke in Virginia

- The majority of Virginians (98%) believe that exposure to secondhand smoke is a health hazard.⁸
- Eighty-five percent of Virginians believe that all workers should be protected from secondhand smoke in the workplace.⁸
- In Virginia, 1,000 people die each year due to secondhand smoke.⁸
- Seventy-one percent of Virginians support a Statewide Law that would prohibit smoking in public places.⁸
- Sixteen percent of high school students and 5% of middle school students reported that they currently smoke cigarettes.⁹
- Overall more than a quarter percentage (25.6%) or one out of every four of Virginia's youth in six grades through twelve grades have been diagnosed of asthma in their lifetime and 14% currently have asthma.⁹

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- Females and Black students were more likely than males and white and Hispanic students to report having current asthma (Figure 1).⁹
- According to the 2007 Youth Tobacco Survey (YTS), 15.0% of middle school and 14.0% of high school students have current asthma (Figure 2).⁹

Figure 1. Current Asthma Among Youth by Gender and Race/Ethnicity, Virginia, 2007

Source: Virginia Youth Tobacco Survey (YTS), 2007. Percentages are weighted.

- Among students with current asthma, a quarter percentage (25.4%) of them were current smokers and 16.3% were exposed to secondhand smoke, 12.7% had an asthma attack, and 8.0% visited an emergency department (ED) in the past twelve months (Figure 3).⁹
- Asthma attacks were more frequent in Blacks than in whites and Hispanics (18.0% versus 10.9% and 10.1% respectively) (figure 4).⁹
- Students with current asthma who reported having an asthma attack in the past 12 months, 19% were current smokers and 17% were exposed to secondhand smoke (Figure 5).⁹

Figure 2. Current Asthma Among Youth and Adults, Virginia, 2007

Source: Adult data- Virginia Behavioral Risk Factor Surveillance System, 2007.
Student data- Virginia Youth Tobacco Survey, 2007. Percentages are weighted.

- In 2007, 38% of middle school students and 34% of high school students currently live in a home where someone smokes.⁹
- About three-quarters (73.3%) of adult Virginians with current asthma reported that smoking is not allowed anywhere in their homes.¹⁰
- 15.6% of adults with current asthma reported that they do allow smoking in some places in the home including 11.1% who have no rules regarding smoking in the home.¹⁰

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Figure 3. Current Smokers, Exposure to Secondhand Smoke, Asthma Attack, and Emergency Department Visits in the Past Twelve Months Among Youth with Current Asthma, Virginia, 2007

Source: Virginia Youth Tobacco Survey, 2007. Percentages are weighted.
* ED– Emergency Department.

Figure 4. Asthma Attack Among Youth with Current Asthma by Race and Ethnicity, Virginia, 2007

Source: Virginia Youth Tobacco Survey, 2007. Percentages are weighted.

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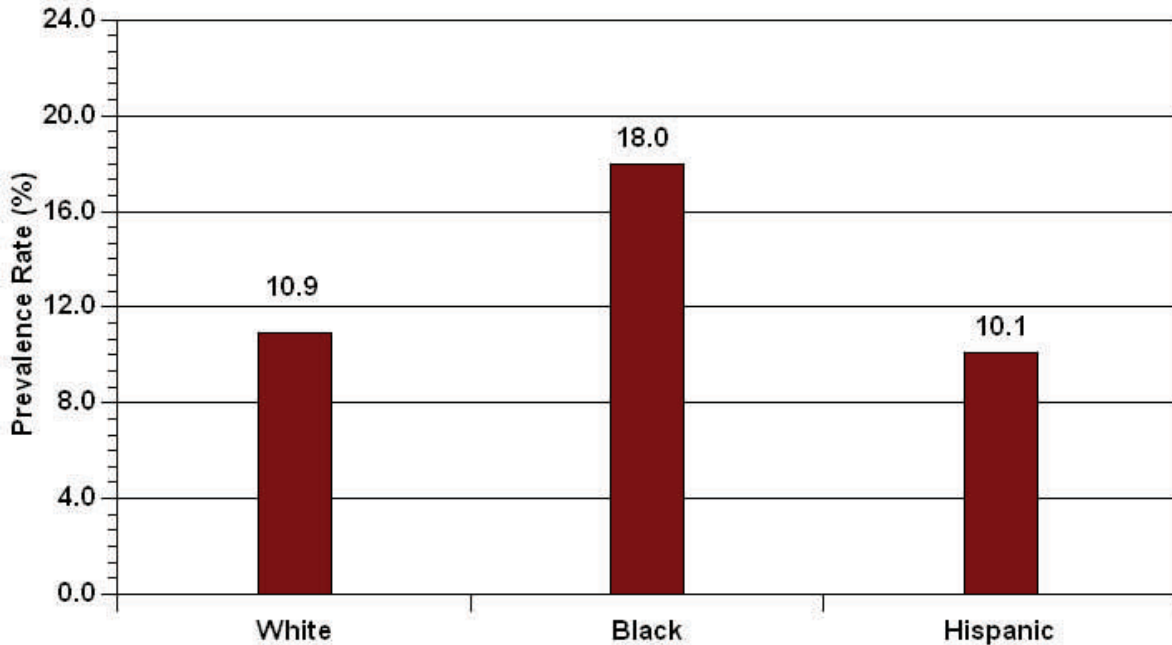
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Data Sources: Behavioral Risk Factor Surveillance System (BRFSS)- BRFSS is an ongoing, state-based, random-digit-dialed telephone survey of the non-institutionalized U.S. population aged 18 years and older, and is sponsored by the Centers for Disease Control and Prevention. BRFSS is the largest continuing telephone survey in the world and is conducted annually in all 50 states, the District of Columbia, Guam, the U.S. Virgin Islands, and the Commonwealth of Puerto Rico. BRFSS data are used to track and monitor the prevalence of chronic diseases and high-risk health behaviors. It also evaluates progress on decreasing high-risk behaviors, increasing awareness of chronic disease, and increasing use of preventive health services. The answer to the survey questions stands for only self-reported diagnosed cases of asthma. BRFSS data are weighted for the probability of selection. Virginia has participated in the BRFSS since 1989. For more information visit <http://apps.nccd.cdc.gov/brfss/index.asp>

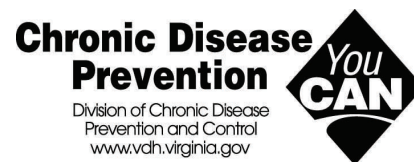
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Data Sources: Youth Tobacco Survey (YTS): The Virginia Youth Tobacco Survey is sponsored by the Virginia Tobacco Settlement Foundation (VTSF), administered by the Virginia Commonwealth University's Survey and Evaluation Research Laboratory (SERL) with guidance from the Centers for Disease Control and Prevention (CDC). The Youth Tobacco Survey (YTS) was designed by the CDC as part of its Youth Tobacco Surveillance and Evaluation System. This system is designed to support states in developing and maintaining their state-based comprehensive tobacco prevention and control programs. The samples were selected and provided by the CDC and were based off of the State Department of Education's public school enrollment data. The data were weighted by the CDC to account for unequal chances of selection, differential non-response, and demographics (grade, race, and gender) so as to better represent middle school and high school children in Virginia. Two asthma questions have been added to the (YTS) for the 2007-2008 school years. For more information visit: <http://www.vtsf.org/data/youth-tobacco-survey.asp>

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