

Environmental Tobacco Smoke (ETS)

WHAT IS ENVIRONMENTAL TOBACCO SMOKE (ETS)?

Environmental tobacco smoke (ETS), or secondhand smoke, is released into the air from exhaled tobacco smoke and burning cigarettes, cigars, and pipes. Tobacco smoke contains over 4,000 chemicals, many which are poisonous.¹

There is new evidence that people are exposed to chemicals from tobacco smoke long after a person has smoked in a given indoor area.^{2,3,4,5} Thirdhand smoke is a new term for tobacco toxins that remain and persist after a period of active smoking. These chemicals are deposited on surfaces such as tables, furniture, and floors, as well as in dust. Thirdhand smoke also volatilizes and contaminates air for days, weeks, and even months after the smoking has ceased.²

HOW ARE WE EXPOSED?

- Smoking cigarettes
- Inhaling secondhand smoke
- Smoking indoors, which may magnify exposure, especially in poorly ventilated areas⁶
- Inhalation of contaminated indoor air or contact with surfaces contaminated with third hand smoke²

SYMPTOMS & HEALTH PROBLEMS

Children exposed to secondhand smoke may experience the following short-term health effects:⁷

- Upper and lower respiratory infections⁸

- Otitis media with effusion, or fluid in the middle ear^{9,10,11}
- Sudden infant death syndrome (SIDS)^{12,13,14}
- Exacerbation of asthma^{8,15,16,17}
- Bronchitis^{18,19}
- Pneumonia^{18,19}
- Impaired growth and development^{20,21,22}

Children exposed to secondhand smoke may experience the following long-term health effects:

- Decreased lung function^{23,24}
- Increased risk of asthma²⁵
- Increased risk of cancer^{8,26}

The following health effects have been associated with exposure to secondhand smoke in adult non-smokers:⁷

- Increased risk of lung cancer⁸
- Increased risk of coronary heart disease^{18,27}

FOLLOW UP ACTION

- Refer to the Community Health Aide Manual (CHAM) section, "Stopping Tobacco" for detailed information on smoking cessation for patients. Patients are more likely to quit smoking with the advice and support of their health care providers.⁷
- If the patient needs medications to quit or is pregnant, breastfeeding, or a teenager, refer patient to a physician.
- New evidence suggests that adults who are aware of the harms to children from

third hand smoke are more likely to have a strict smoking ban in the home.² Thus, incorporating the concept of

thirdhand smoke into tobacco counseling messages could discourage smoking in the home.

REDUCING YOUR EXPOSURE

You can prevent or minimize exposure to tobacco and secondhand smoke in the following ways:

- Try to quit or cut back on smoking to improve your health and the health of your loved ones.
- Avoid smoking around other people to reduce their exposure to secondhand smoke.
- Avoid smoking indoors, especially in areas that are not well ventilated, to reduce secondhand and third hand smoke.
- Non-smokers can reduce their exposure to secondhand smoke by avoiding indoor areas where people smoke or by establishing a smoking ban in their homes or workplaces.
- Parents who smoke should cover their clothes with a clean jacket or smock before picking up or holding a baby.

Both smokers and nonsmokers may reduce their risk of cancer in the following ways:

- Eat dark berries (such as blueberries and crowberries) and other foods high in flavonoids daily. The National Cancer Institute reports that foods containing flavonoids (particularly onions and apples) may reduce lung cancer risk by nearly 50 percent.²⁸ Freezing berries is even better, as it bursts the cell membrane and increases the body's ability to absorb and use these nutrients.
- Eat foods high in lutein, such as leafy greens (including kale and spinach), carrots, corn, red peppers, romaine lettuce, tomatoes, potatoes, and red, blue and purple fruits. Foods containing lutein are associated with a lower risk of lung, breast and colon cancers.²⁹
- Consider drinking green tea, which contains high amounts of antioxidants and is less processed than black tea.²⁹ A large body of evidence shows that green tea protects against cancer development.^{30,31,32} Smokers who drink green tea have shown decreased oxidative DNA damage, which is a precursor to cancer.³³ Green tea may also fight cancer in people who have already been diagnosed, for instance by preventing the reoccurrence of breast cancer³⁴ and enhancing survival time of ovarian cancer survivors.³⁵ When preparing green tea, steep for at least 5 minutes to ensure releasing a greater concentration of antioxidants, and avoid adding milk or cream which may inactivate the antioxidants.²⁹

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- ⁷ Etzel RA, ed. 2003. *Pediatric Environmental Health*. 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics.
- ⁸ US Environmental Protection Agency. 1992. *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*. Research Triangle Park, NC: US Environmental Protection Agency, Office of Research and Development, Office of Air and Radiation. EPA Publication 600/6-90/006F.
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