

Firsthand, Secondhand, and Thirdhand Smoke

Cigarettes are dangerous, addictive products that can affect everyone, regardless of whether they smoke. Years of research have established the dangers of firsthand and secondhand smoke, but studies have just begun delving into the possible consequences of thirdhand smoke.

Firsthand smoke refers to the smoke that is inhaled directly from the cigarette. Secondhand smoke, also known as environmental tobacco smoke, is the combination of two types of smoke, that which comes from the lit end of a cigarette and that which is exhaled by a smoker. Thirdhand smoke is the residue from tobacco smoke that is left on surfaces and objects in areas where smoking has occurred.

Thirdhand smoke will cling to all types of surfaces, including skin, hair, clothing, carpets, windows, dust, walls, and curtains. Even once smoking is stopped, thirdhand smoke does not dissipate with time. The longer that smoking occurs in an area, the more residue will build up.

Health Effects

While researchers have been studying thirdhand smoke since the early 1990s, the topic only really began to pique public interest in 2009. The expansion of thirdhand smoke studies has allowed researchers to find that nicotine residue will react with indoor pollutants, like ozone or nitrous acid, and create carcinogenic chemicals. Some of these chemicals attach to DNA, which may result in genetic mutations, cancerous tumors, or uncontrolled cell growth.

Infants and toddlers face the highest health risk from these carcinogens as they may be exposed to them more often. Because they crawl and put their toys and hands in their mouths, it is more likely that they will inhale or swallow these chemicals. Environmental hazards take a higher toll on children because their bodies are still developing.

RESOURCES

American Cancer Society:

www.cancer.org

American Lung Association:

www.lung.org

Centers for Disease Control and Prevention:

www.cdc.gov/tobacco

National Cancer Institute:

www.smokefree.gov

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In a study in the journal, *Environment International*, researchers collected dust samples from smokers' and non-smokers' homes. They examined the dust and estimated the cancer risk based on its components. They found that in 75% of smokers' homes and 67% of non-smokers' homes, the cancer risk exceeded the limit recommended by the U.S. Environmental Protection Agency.

Carcinogenic chemicals can be passed from smokers to non-smokers through touch. For example, smokers may bring carcinogenic compounds with them when they go to a non-smoking friend's house. Those who smoke outside may also end up with thirdhand smoke inside their house due to airborne secondhand smoke and any residue that has attached to their clothing, skin, or hair.

A Triple Threat to Children

Children who are exposed to the highest levels of carcinogenic chemicals from thirdhand smoke are frequently those whose parents smoke. These children will also likely be exposed to secondhand smoke. Secondhand smoke increases the risk of Sudden Infant Death Syndrome (SIDS),

respiratory tract infections, asthma, and middle ear infections. Children of smokers are also more likely to become smokers themselves, increasing the chances that they will develop cancer, heart disease, or other ailments. Parents who smoke put their children at risk for a variety of serious health issues.

Multi-Unit Housing

For non-smokers, secondhand and thirdhand smoke can pose real problems, especially for those living in apartments, condominiums, and townhomes. There may be little that non-smokers can do to protect themselves from these toxins.

Smoke may travel throughout buildings due to ventilation systems or it may come in through open windows or doors, electrical lines, or cracks in walls. Units that have previously been smoked in may still have thirdhand smoke chemicals in the carpets or on other surfaces, even if the unit has been professionally cleaned.

Smokefree multi-unit housing is a trend that is gaining popularity across the country. It provides owners with lower insurance costs, a decreased fire risk, and higher profits. It also helps to protect tenants' health, reducing the risk that a building owner will be sued over exposure to second or thirdhand smoke.

Eliminating Thirdhand Smoke

It takes serious effort to completely eliminate thirdhand smoke, especially when the residue has built up over time. Airing out a room or vehicle may reduce the smell of smoke, but the carcinogens will remain. Vacuuming and regular laundering can help to reduce the number of chemicals present. Steam cleaning carpets, drapes, and furniture provides extra assistance with removal. Surfaces should be scrubbed down thoroughly. In certain instances, when the amount and duration of smoking was excessive, furniture and carpet may need to be replaced and new paint applied.



Avoiding Thirdhand Smoke

As the chemicals in thirdhand smoke can be transferred via touch, it may not be possible to entirely avoid it. However, you can keep your exposure to a minimum. Avoid spending a significant amount of time in smokers' houses or cars. Specifically ask for nonsmoking hotel rooms and rental cars while on vacation. If you're a renter, look for smokefree units or homes. Or if you're looking to buy a home, make sure the home's previous owners did not smoke inside. Look for telltale signs of indoor smoking, like burns in the carpet or yellowed walls.



Smokers – Take it Outside

If you're a smoker, keep your home and car smokefree. This doesn't just help you, but it helps your family, too. Take it outside and remember to wash your hands after every cigarette, especially if you have young children in your home.

But even better than all that – why not quit? You'll improve your health, save money, and be a great example for your family. Embrace the opportunity to cut this bad habit out of your life and take charge of your health!