

# THIRDHAND SMOKE Resource Center

## How can I protect my child from thirdhand smoke?

Thirdhand smoke is the chemical residue from tobacco smoke. It is also called “tobacco smoke residue” or “stale tobacco smoke.” The chemicals in thirdhand smoke are toxic to humans, especially children. It can linger for years in dust and on household surfaces. It can also become embedded in carpets, furniture, clothes, and building materials. It is difficult and expensive to remove.

Babies and young children are at the greatest risk of exposure to thirdhand smoke. Here are some simple steps you can take to minimize exposure in your home and car:

### In the home:

#### Make sure all your child’s indoor environments are 100% smokefree.

- That means no smoking cigarettes, pipes, cigars, electronic cigarettes, or marijuana at any time inside your home or anywhere else your child spends time. This includes homes of friends and family, hotels, restaurants and entertainment venues, and playgrounds.
- Remember that smoke can drift into your home, so don’t allow anyone to smoke outside near doors, windows, or ventilation systems.
- When renting an apartment or buying a new home, ask questions about tobacco, e-cigarette, and marijuana use by previous residents. Include what you learn in your overall decision process.
- Before buying something used, such as furniture or clothing, ask about tobacco, e-cigarette, and marijuana use by previous owners. If you can’t find out, factor that into your decision to purchase.

#### Make sure adults who spend time with your child are 100% smokefree, especially childcare workers.

- When people smoke, thirdhand smoke residue sticks to their clothes, hands, face, body, and hair.



- Ask anyone who smokes to wash their hands, shower, and change into clean clothes before coming in contact with your child.

It can be very difficult to remove thirdhand smoke from indoor environments, especially if the smoking took place for a long period of time. Depending on the size of the reservoir of pollutants, complete renovation may be required. If you cannot avoid your child spending time in a home that may contain thirdhand smoke, there are a few steps you can take to reduce your child's exposure.

### **Tips for reducing your child's exposure if you believe that an indoor environment is polluted with thirdhand smoke.**

- People who smoke can carry tobacco residue into your home on their skin, hair, and clothes, even if they always smoke outside. Encourage them to shower and change into clean clothes when coming inside after smoking.
- If you have items that came from a smoker's home, especially clothes, toys, rugs, or blankets, thoroughly wash them or consider discarding them.
- You may be able to reduce thirdhand smoke in your home by (1) opening windows to air out rooms each week, (2) regularly wiping surfaces with a diluted white vinegar solution, (3) frequent dusting, and (4) weekly vacuuming with a HEPA filter.
- Regularly washing your child's blankets, bedding, and toys.

### **In the car:**

#### **Make sure your child travels in 100% smokefree cars.**

- Don't allow any smoking in your car at any time, and don't let your child ride with anyone who does allow smoking in their car.
- If you are buying a used car, be sure to ask about smoking by previous owners. Thirdhand smoke is nearly impossible to remove from automobiles.

Unfortunately, it is virtually impossible to remove thirdhand smoke once it has become embedded in a car. Even aggressive cleaning will not rid the car of toxic chemicals. Young children are particularly at risk of exposure. If you cannot avoid your child riding in a car that may contain thirdhand smoke, there are a few steps you can take to reduce your child's exposure.



## **Tips for reducing your child's exposure if you believe that a car is polluted with toxic thirdhand smoke:**

- When your child is in a car polluted with thirdhand smoke, turn on the air-conditioning using the “outside air mode.” Make sure you do not simply recirculate the air in your car; this is sometimes the default setting in a car. By bringing outside air into the car using air-conditioning, you will reduce the concentration of thirdhand smoke pollutants in the air of the car.
- Do not leave the car seat in the car. Put your child's car seat in the car only when your child will be using it. The less time the car seat is in the car, the less time it will be exposed to toxic thirdhand smoke.
- Before you put the car seat in the car, put a clean towel under the car seat. The towel will act as a physical barrier between the car's upholstery, which contains thirdhand smoke pollutants, and the clean car seat.
- When you are finished using the car seat, remove it and the towel. Wipe the car seat with a solution of diluted vinegar and water and throw the towel into the laundry.
- As much as possible, limit the amount of time your child is in the car.
- Because children can absorb thirdhand smoke through their skin, it is a good idea to wash your child's hands and face when the car ride is completed.

The best way to protect your child from thirdhand smoke exposure in a car is to (1) never ride in cars that have been smoked in, (2) never let anyone smoke in your car, and (3) always ask for a non-smoking rental car—if you smell tobacco odor in the rental car, ask for another.

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## Sources

Matt GE, Quintana PJE, Hoh E, Zakarian J, Dodder NG, Record R., Hovell M, Mahabee-Gittens M, Padilla S, Markman L, Watanabe K, Novotny T, Persistent tobacco smoke residue in multiunit housing: Legacy of permissive indoor smoking policies and challenges in the implementation of smoking bans, Preventive Medicine Reports, Volume 18, 2020, 101088, ISSN 2211-3355, <https://doi.org/10.1016/j.pmedr.2020.101088>.

Matt, GE, Quintana PJE., Hovell M, Chatfield D, Ma D, Romero R, Uribe A, Residual tobacco smoke pollution in used cars for sale: Air, dust, and surfaces, Nicotine & Tobacco Research, Volume 10, Issue 9, September 2008, Pages 1467–1475, <https://doi.org/10.1080/14622200802279898>.

Matt GE, Quintana PJE, Zakarian JM, Fortmann A, Chatfield D, Hoh E, Uribe A, Hovell M. When smokers move out and non-smokers move in: residential thirdhand smoke pollution and exposure, Tobacco Control, 2011;20:e1, <http://dx.doi.org/10.1136/tc.2010.037382>.

Matt GE, Quintana PJE, Zakarian JM, Hoh E, Hovell M, Mahabee-Gittens M, Watanabe K, Datuin K, Vue C, Chatfield D. When smokers quit: exposure to nicotine and carcinogens persists from thirdhand smoke pollution, Tobacco Control, 2017;26:548- 556, <http://dx.doi.org/10.1136/tobaccocontrol-2016-053119>.



## Sources

Chen, H., Li, G., Allam, V. S. R. R., Wang, B., Chan, Y. L., Scarfo, C., Ueland, M., Shimmon, R., Fu, S., Foster, P., & Oliver, B. G. (2020). Evidence from a mouse model on the dangers of thirdhand electronic cigarette exposure during early life. *ERJ Open Research*, 6(2), 00022–02020. <https://doi.org/10.1183/23120541.00022-2020>.

Goniewicz ML, Lee L. Electronic cigarettes are a source of thirdhand exposure to nicotine. *Nicotine Tob Res*. 2015; 17(2):256-258. Published online 2014 August 30.

Jacob P 3rd, Benowitz NL, Destailats H, Gundel L, Hang B, Martins-Green M, Matt GE, Quintana PJ, Samet JM, Schick SF, Talbot P, Aquilina NJ, Hovell MF, Mao JH, Whitehead TP. Thirdhand Smoke: New Evidence, Challenges, and Future Directions. *Chem Res Toxicol*. 2017;30(1), 270-294.

Marcham CL, Floyd EL, Wood BL, Arnold S, & Johnson DL. (2019). E-cigarette nicotine deposition and persistence on glass and cotton surfaces. *Journal of occupational and environmental hygiene*, 16(5), 349–354. <https://doi.org/10.1080/15459624.2019.1581366>

Sempio C, Lindley E, Klawitter J, Christians U, Bowler RP, Adgate JL, Allshouse W, Awdziejczyk L, Fischer S, Bainbridge J, Vandyke M, Netsanet R, Crume T, Kinney GL. Surface detection of THC attributable to vaporizer use in the indoor environment. *Sci Rep*. 2019; 9(1):18587. doi: 10.1038/s41598-019-55151-5.

Son Y, Giovenco DP, Delnevo C, Khlystov A, Samburova V, Meng Q. Indoor air quality and passive e-cigarette aerosol exposures in vape-shops [published online ahead of print, 2020 May 23]. *Nicotine Tob Res*. 2020;ntaa094. doi:10.1093/ntr/ntaa094.

Yeh, K., Li, L., Wania, F., & Abbatt, J. P. (2022). Thirdhand smoke from tobacco, e-cigarettes, cannabis, methamphetamine and cocaine: Partitioning, reactive fate, and human exposure in indoor environments. *Environment International*, 160, 107063. <https://doi.org/10.1016/j.envint.2021.107063>



