

THIRDHAND SMOKE Resource Center

Can I remove thirdhand smoke from my home?

The short answer:

Thirdhand smoke is the chemicals left behind when someone smokes tobacco. Thirdhand smoke is unhealthy for people and pets. It can stick around for a long time in homes and cars. It gets into your body through your lungs, skin, and mouth. Getting rid of it is really hard and can cost a lot of money.

If people only occasionally used tobacco in your home, you may be able to clean and remove much of the thirdhand smoke. If people frequently used tobacco in your home and it is heavily polluted with thirdhand smoke, it is probably impossible to remove the residue without major and expensive renovations to your home.

The long answer:

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.

Removing thirdhand smoke from your home includes two approaches: cleaning household objects and cleaning your home’s structure. Getting rid of thirdhand smoke residue on household objects, like dishes, toys, and blankets, is straightforward. Cleaning carpets, furniture, upholstery, mattresses, books, and other personal belonging can be complicated if not impossible. Removing thirdhand smoke from structural elements, such as walls, floors, ceilings, doors, cabinets, and airducts, is difficult and expensive, especially if there is a lot of thirdhand smoke in the home.

Cleaning Household Objects

- Clean clothes, toys, and bedding in a washing machine. Depending on how polluted the fabrics are, you may need to wash them multiple times.



- Clean kitchenware and washable toys in a dishwasher. Depending on how polluted the objects are, you may need to wash them multiple times.
- Use diluted vinegar or basic cleaning solutions, such as Simple Green, to wash other objects and surfaces.
- Consider replacing objects that cannot be cleaned, such as mattresses, rugs, or large furniture.

The Challenge of Cleaning Structural Surfaces

- If you hire a professional (e.g., painters, remediation experts), they typically use Trisodium Phosphate (TSP) to clean surfaces around the home. TSP is a hazardous chemical, and it requires specialized tools and personal protective equipment. TSP cannot remove thirdhand smoke residue embedded in porous materials like wood panels, particle board, and drywall.
- Alcohol-based primers and paint may trap thirdhand smoke residue on a wall. It may remove the tobacco odor (at least temporarily), but it does not remove thirdhand smoke chemicals.
- Ozone generators remove tobacco odors from the air by changing odorant into odorless compounds. Ozone generators create new chemicals and do not remove chemicals embedded in materials.
- Masking tobacco odors with fragrances also does not remove the chemicals. It simply covers up unpleasant smells.
- In homes where smoking has taken place over years, thirdhand smoke chemicals can soak into surfaces and become embedded in walls, flooring, carpets, and HVAC systems. Once the chemicals are embedded, cleaning the surface is not enough-- the residue will resurface and re-emit back into the air. You must remove *all* of the thirdhand smoke, even what has soaked into surfaces in your home.
- If thirdhand smoke is embedded in building materials, the only way to guarantee the residue is gone is to completely remodel by removing and replacing all walls, flooring, air ducts, etc.

Do you have more questions about the toxic legacy of tobacco smoke, how it affects human health, and what we can do about it? Learn more [here](#).

Updated: February 2024

Sources:

Ask This Old House. Understanding Thirdhand Smoke. Home Safety Videos.

Retrieved from: <https://www.thisoldhouse.com/home-safety/21249597/understanding-thirdhand-smoke>

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