

# THIRDHAND SMOKE Resource Center

## What does it mean when we smell stale tobacco 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. Have you ever walked into a room and gotten a whiff of stale tobacco smoke? Or maybe smelled it as someone walked by? The smell of stale cigarette smoke--even when no one is smoking--is a sign of thirdhand smoke. As we breathe in, odor receptors in our noses recognize the chemicals in thirdhand smoke and trigger a signal in our brains that allows us to recognize stale tobacco smoke.

When we smell stale tobacco smoke, it means that thirdhand smoke pollutants have been released into the air from places where they have accumulated. As we breathe this polluted air, we are bringing thirdhand smoke pollutants into our bodies. Thirdhand smoke pollutants contain chemicals that can irritate many organs in our bodies (including the nose, throat, lungs, liver, and skin), cause inflammation, harm normal cell functioning, damage DNA, and cause cancer in humans.

Even when we cannot smell tobacco smoke, thirdhand smoke can still be present. Our sense of smell is a good warning system, but we are only able to smell an odor when the amount of a chemical is above the level that our noses can detect. We may not be able to smell thirdhand smoke below this level, but that does not mean there is no toxic thirdhand smoke present. To further complicate matters, some of the chemicals in thirdhand smoke are odorless; we cannot smell them no matter how much is present.

So, while the smell of stale tobacco smoke can be a good indicator of thirdhand smoke, we can still be exposed to these harmful chemicals even if we cannot detect them.

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## Sources

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