

THIRDHAND

SMOKE Resource Center

What is thirdhand smoke?

The short 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.

The long answer:

Thirdhand smoke is the chemical residue that persists after secondhand tobacco smoke has disappeared from the air. Secondhand smoke is a combination of the sidestream smoke of a cigarette and the mainstream smoke exhaled by smokers. Thirdhand smoke is not strictly smoke, but a mixture of toxic chemicals that stick to surfaces, become embedded in materials, such as carpets, walls, furniture, blankets, and toys, and can later be re-emitted back into the air and accumulate in house dust. Thirdhand smoke can linger indoors for years. People can be exposed to thirdhand smoke by touching contaminated surfaces (absorption through the skin), by eating contaminated objects or dust, and by breathing contaminated air and re-suspended thirdhand smoke components.

The U.S. Surgeon General has concluded that there is no safe level of exposure to tobacco smoke. The California Air Resource Board has classified secondhand smoke as a toxic air contaminant. Because secondhand smoke leads to thirdhand smoke, it is not surprising that numerous secondhand smoke constituents are also found in thirdhand smoke, such as human carcinogens, reproductive toxicants, and developmental toxicants (as defined by California’s Proposition 65 and the International Agency for Cancer Research). Some chemicals in thirdhand smoke are not found in freshly emitted tobacco smoke because they are the result of the chemical transformation of tobacco smoke components in the environment.

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Sources

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