

Third-hand smoke: The hidden health hazard inside homes

The residue of second-hand smoke can linger for months or years on furniture, curtains, clothing and other surfaces.

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For non-smokers, living with a smoker can be challenging. The desire to avoid being exposed to tobacco smoke clashes with the reluctance of the smoking family member to venture outside for every smoke break.

Many households end up with a compromise, for instance by restricting where in the home someone can smoke. As a result, despite the ban on smoking in most public places, many people remain exposed to second-hand smoke in their home.

A 2022 study published in the journal, *Indoor Air*, estimated that one in six adults in Singapore were exposed to second-hand smoke by a household member, as most smokers continued to smoke on the home premises.

The study also found that, in most cases, smokers were aware that their second-hand smoke harmed others and took steps to protect their family members. Common strategies included smoking in designated parts of the home, smoking out of a window or balcony, opening windows to air out the room, or waiting for moments when they were alone at home. These compromises may be well-intentioned but are not enough for many reasons. For one thing, they don't consider a further threat: That of third-hand smoke.

EVEN AT LOW DOSES, SECOND-HAND SMOKE AFFECTS HEALTH

Most people are generally aware



Babies and young children are more prone to being exposed to third-hand smoke as they tend to spend more time exploring surfaces, crawling on the floor, and putting their hands or objects in their mouths. ST FILE PHOTO

that breathing in second-hand smoke causes lung cancer. It is also linked to asthma, respiratory issues and heart disease, as well as cot death, ear infections, asthma and respiratory diseases in children.

A lesser known fact is that second-hand smoke is dangerous even at low levels. Studies have found that short-term exposure, and exposure at low levels, also increase the risk of heart disease and respiratory symptoms.

Second-hand smoke is especially dangerous for young children, as their bodies are smaller and take up a higher concentration of toxic chemicals. Children also tend to be exposed to more second-hand smoke by family members as they spend more time in the home.

The elderly and people with chronic diseases, such as respiratory infections, asthma, heart disease or cancer, are also at a higher risk of suffering detrimental health effects.

Nevertheless, anyone can develop health issues from second-hand smoke as it is a deadly cocktail of over 7,000 chemicals and contains 69 known human carcinogens such as arsenic, benzene, chromium and formaldehyde. Each year, around 1.3 million people around the world die because of exposure to second-hand smoke.

There is no safe level of exposure to second-hand smoke, and the only way to effectively protect yourself is to avoid exposure completely.

Strategies such as smoking out of a window or in a separate room do not protect family members, as smoke still reaches inside the home. The only way to effectively protect others is to set a no-smoking rule covering the entire home.

PARTICLES LEFT BEHIND BY SECOND-HAND SMOKE

While second-hand smoke is a

well-documented health concern, the often-overlooked threat of third-hand smoke adds another layer of complexity.

Third-hand smoke is the residue that lingers on furniture, curtains, clothing and other surfaces after the second-hand smoke is gone. It can stick around for months or even years depending on the type of surface, ventilation, the level of second-hand smoke in the space and how often the surface is cleaned.

You may have noticed it as a stale tobacco smell inside a room, a taxi, or on the clothes of a person who has been around tobacco smoke. While this stale tobacco smell is a tell-tale sign of third-hand smoke, it can be present on surfaces even when there is no distinct smell.

Similarly to second-hand smoke, third-hand smoke contains many toxic chemicals such as nicotine, carcinogens, and heavy metals.

Third-hand smoke is also dangerous to health. Research studies have linked third-hand smoke exposure to asthma, respiratory disease and cancers. In children, it is also linked to allergies, developmental issues and gastrointestinal disease.

Babies and young children are also more prone to being exposed to third-hand smoke as they tend to spend more time exploring surfaces, crawling on the floor, and putting their hands, or objects coated in third-hand smoke, in their mouths.

It is possible to get rid of third-hand smoke by deep cleaning the affected surfaces and ventilation systems, but this can be a real hassle, not to mention costly.

TOWARDS SMOKE-FREE HOMES IN SINGAPORE

Family dynamics can be tricky to navigate, especially if the smoking family member refuses to listen.

While they may not be ready to quit, it is important they do not let their smoking habit affect the health of others.

Breathing clean air is essential to everyone's well-being. Everyone has a right to live in a home free from second-hand and third-hand smoke.

Smoking, in contrast, is not essential to well-being. It is not a right and, if it is a matter of respecting the choices of smokers versus the choices of non-smokers, the choice of non-smokers takes precedence.

This principle has been upheld in various legal cases. For instance, in the US, a child

custody decision was reversed when it was revealed that the parent had remained adamant about maintaining the habit and was exposing the child to second-hand smoke inside the home.

In another case, a boy won the right to make his parents, both smokers, smoke outside the home as he was suffering from respiratory issues.

Within the intricate dynamics of a family, open conversations about the health implications of second-hand and third-hand smoke can foster a collective commitment to creating a healthier living environment. This can help family members to collaboratively establish a no-smoking rule in the home.

More can also be done at the national level to educate Singaporeans and help families create smoke-free homes.

The *Indoor Air* study found that, while most Singaporeans are aware that second-hand smoke causes lung cancer, relatively few are aware that it causes cardiovascular disease, breast cancer, and ear infections in children.

In addition, around half of the respondents mistakenly believed that restricting smoking to designated areas or opening a window effectively protects against the harms of second-hand smoke.

These findings suggest that there is room to improve awareness among Singaporeans on the health issues linked to second-hand and third-hand smoke, as well as effective ways to protect from exposure.

Property owners can also play a pivotal role by setting no-smoking rules in tenancy contracts. They would benefit financially from doing so, as studies from other countries have found that smoke-free homes tend to reap a higher value than homes exposed to tobacco smoke.

This is due to the high cost required to deep-clean third-hand smoke out of homes, and the fact that most people prefer to live in a smoke-free home.

While compromise is healthy in family dynamics, no one should have to compromise on their health. Making the home completely smoke-free is crucial to protect the health and well-being of non-smoking family members, and should be a priority in Singapore.

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