

Are Scented Candles Harmful to Your Health?

When candles burn, they release various vapors and particles into the air, but research suggests that using them is safe.

Written by Melinda Wenner Moyer (New York Times) 9 November 2021

You may have seen some scary headlines about the hidden dangers of scented candles — including those claiming that certain types (particularly candles made of paraffin wax) are “toxic” and can release harmful, cancer-causing chemicals into the air.

But while scented candles do produce various vapors and particles that can be unsafe to inhale at high doses, research suggests that with typical use, the dose you get is far below what is considered harmful to your health. And according to experts, there is no reason to think that occasional candle-burning will be dangerous.

In one key peer-reviewed study published in 2014, for instance, researchers burned a scented paraffin candle in rooms of various sizes — from the equivalent of a small bathroom measuring 6 by 6 by 9 feet, to a living room measuring 15 by 15 by 9 feet — and used special instruments to measure what was released into the air and lingered there. They found that while some potentially cancer-causing chemicals, like benzene and formaldehyde, were produced, the highest measured levels after four hours of continuous burning were less than half as high as the recommended indoor air-quality limits set by the World Health Organization. (This was true even in the small bathrooms.) The highest levels also fell within the range of what is considered typical indoor air concentrations of the chemicals, too.

This led the study authors to conclude that “under normal conditions of use, scented candles do not pose known health risks to the consumer.” (It’s important to note that while this study’s conclusion is consistent with others, few studies have looked into the health effects from burning scented candles in general. And most, including this one, were conducted by researchers affiliated with the candle industry. But independent researchers have said that the findings are solid.)

When candles burn, they release chemicals in “relatively trivial concentrations,” said Pamela Dalton, an odor perception and irritation researcher at the Monell Chemical Senses Center in Philadelphia. People who walk out onto a busy city street will inhale higher levels of potentially toxic chemicals just from car exhaust, she said. And the amount of odor-causing particles produced in general are on the order of a few parts per million or even parts per billion, she added, which is the equivalent of pouring a teaspoon’s worth of a chemical into an Olympic-sized swimming pool.

Nikaeta Sadekar, a respiratory toxicologist with the non-profit Research Institute for Fragrance Materials, agreed. Exposure to chemicals emitted by scented candles “is so low that they pose no significant risk to human health,” she said. “Even the highest users of scented candles and other fragranced products are not putting themselves at any appreciable risk of harm.”

According to Dr Dalton, humans can smell fragrances at very, very low concentrations, which might lead them to overestimate their potential risks. “We’ve been told for a very long time that we’re at the low end of the animal kingdom in terms of being able to detect odors. And in fact, that’s just simply not true,” she said. Since our noses are so sensitive, we can often smell things in the air even when they are barely there. “We smell something, it smells strong, and we just automatically assume that the concentration of those odorant molecules in the air around us, and what we’re breathing represents a high concentration. And very often that’s not the case,” she said.

Still, the National Candle Association says that if people want to minimize the amount of soot released into the air, they should burn candles in well-ventilated areas that are away from drafts and vents, keep wicks trimmed to about ¼ inch and make sure that the pool of wax is free of debris.

Paraffin wax is made from petroleum by-products, so if you're concerned about the environment, consider soy, stearin or beeswax candles instead. Soy candles have also been shown to produce less soot than paraffin candles, and some people, including those with asthma, may be sensitive or allergic to certain fragrances. If you notice irritation when burning scented candles, such as a runny nose or sneezing, you may want to stop or to burn unscented candles instead, Dr Dalton said.

NATIONAL CANDLE ASSOCIATION

<https://candles.org/faqs/>

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