Dear Alice,

I am well aware of the dangers of smoking, but one concept continues to confuse me. How is secondhand smoke more dangerous than mainstream or side-stream smoke?

Answer

Dear Reader,

You’re not alone in your confusion; it seems like there is some hazy information out there about second-hand smoke. There is no hierarchy of harm from the various types of secondhand smoke, which include mainstream and side-stream smoke. All types of secondhand smoke are harmful to your health, according to the American Lung Association.[2]

To understand why this is so, let's begin by defining the terms.

**Secondhand smoke**, also known as environmental tobacco smoke (ETS), is a general term for any smoke that non-smokers are exposed to. There are two types of ETS. **Mainstream smoke** refers specifically to the smoke that a smoker inhales and then exhales, while **side-stream smoke** refers to the smoke that wafts off the end of a lit cigarette, cigar, or pipe. Side stream smoke accounts for 85 percent of the ETS in a smoky room and it contains more carcinogens (cancer causing substances) than mainstream smoke. Those who are exposed to ETS are engaging in what is known as **involuntary or passive smoking**.

The Environmental Protection Agency (EPA) classifies secondhand smoke as a Group A carcinogen, meaning it is a substance known to cause cancer in humans. There is no safe level of exposure to Group A carcinogens, a group that also contains substances like asbestos and arsenic. Even short exposure to secondhand smoke can cause changes in the passive smoker’s blood, making blood platelets stickier, causing damage to blood vessel lining, and disturbing heart rate variability.

Secondhand smoke causes about 3,400 lung cancer deaths and 42,000 heart disease deaths in adult non-smokers annually in the United States. Young children and babies are especially vulnerable to secondhand smoke. Each year, between 150,000 and 300,000 lower respiratory tract infections in infants and children younger than 18 months are due to secondhand smoke exposure.
Another thing you may want to be aware of is thirdhand smoke. According to the Mayo Clinic, thirdhand smoke is the carcinogen-laden residue of smoking that builds up on surfaces over time. It’s difficult to remove all of the residue, even if you clean. So, the best way to avoid third hand smoke exposure is to keep a smoke-free environment.

While the risks of secondhand smoke for non-smokers are serious, smoking is still much riskier for those who chose to light up. According to an EPA report, for every non-smoker who dies as a result of secondhand smoke, eight smokers die as a result of smoking.

The good news is that as the dangers of secondhand smoke become more widely recognized and there are fewer and fewer public spaces clouded with cigarette smoke. Now, many bars, restaurants, and some city streets are completely smoke-free. All of this could serve as yet more inspiration to support those you love in quitting smoking, for their health, and if you spend time with them, for your own.

Alice!

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