Marijuana: Does it cause cancer? [1]

Dear Alice,

I have been reading some of your info about marijuana. My question is: If it is so much stronger than smoking cigarettes and has some of the same ingredients, why don't we hear reports of people who have some form of cancer?

Answer

Dear Reader,

Despite the fact that humans have been growing marijuana for thousands of years, and using it recreationally in the United States since the early 20th century, its effects have not been as thoroughly studied as those of tobacco and cigarette smoking. Most studies exploring the relationship between marijuana smoking and cancer are retrospective case-control studies (a type of observational study in which participants are selected based on their health status, such as having cancer or not having cancer). Many of these studies have shown that the individuals who have smoked marijuana have also smoked cigarettes. Because there is a clear correlation between cigarettes and cancer, the use of them among marijuana smokers in these studies makes it difficult to tease apart a connection between cancer and marijuana specifically. And despite the knowledge that carcinogens in smoked marijuana have the potential to cause cancer, more research is needed to see if there is any relationship between marijuana and cancer (as well as some other health consequences, including lung function, bronchial irritation, and/or chronic obstructive pulmonary disease).

Frequent marijuana users tend to consume less of the drug than heavy cigarette smokers; however, marijuana smokers usually inhale more deeply and keep the smoke in their lungs for a longer period than tobacco smokers. It is possible that these behaviors increase the lung's exposure to chemical by-products associated with smoking. Burning marijuana for smoking releases many substances, some of which are carcinogens, including tar, carbon monoxide, and cyanide. One known carcinogen, benzopyrene seems to be greater in pot smoke than cigarette smoke.

Determining whether there’s a link between marijuana and cancer isn’t exactly clear cut. Besides the use of cigarettes and marijuana overlapping in many studies, retrospective case-control studies are limited to what people remember and choose to report? both of which are potential sources of bias. Also, observational studies can show correlation (or lack thereof) but not cause and effect. So, in this case, two things that seem to be related to one another may
not indicate a cause, but instead are influenced by other factors. Identifying a cause and effect can be tricky, too, because the ability to control for those other factors in research presents ethical concerns (i.e., instructing some study participants to smoke marijuana and others not to, then monitor all participants for cancer growth). However, prospective observational studies (such as recruiting participants who either do or do not smoke marijuana already and are willing to be followed for changes in health status) may be helpful in understanding the relationship between smoking marijuana and cancer (and/or other health issues).

On the flip side, researchers are also looking for possible health benefits associated with marijuana use? especially among individuals with cancer. Some preclinical (meaning very early stage) studies suggest marijuana may have some antitumor properties. In terms of clinical (later stage) studies, research has shown that marijuana can help manage symptoms of cancer and side effects [2] of some cancer treatments, including:

- Pain relief
- Anxiety
- Sleep
- Appetite stimulation
- Nausea and vomiting

The bottom line is that more research is needed to better understand the connection between marijuana use and potential health risks and/or benefits. For now, keep your eyes peeled for what information future studies might reveal. To learn more about what factors are associated with cancer, check out the American Cancer Society (ACS) [3] and the National Cancer Institute (NCI) [4].

Alice!
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