

Legalize marijuana without the smoke

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Smoking cigarettes is, without question, bad for your health. But can we say for certain that smoking marijuana is as harmful? Perhaps not for certain, but it is a safe bet according to the available evidence. Studies have shown that smoking marijuana is associated with cancer, respiratory problems and cardiovascular disease. Like many countries, Canada has worked for decades to decrease tobacco smoking. However, the positive effects of this effort may be undone, if the act of smoking in public becomes socially acceptable again after the recreational use of marijuana becomes legal.

Canada and 167 other countries are signatories on the World Health Organization Framework Convention on Tobacco Control, which aims to end the tobacco epidemic. Is legalizing marijuana a big step in the opposite direction? It could be, but it need not be. Tobacco products, whether smoked or chewed, are toxic and cause cancer. Overall, marijuana is, as far as we know, far less harmful than tobacco. However, marijuana smoke is similar to tobacco smoke in many ways.

There are at least 33 carcinogens in marijuana smoke,¹ which, like tobacco smoke, is a mixture of tiny particles in a gas–vapour. Both types of smoke have similar concentrations of particulate matter and toxicants, including carbon monoxide, hydrogen cyanide and nitrosamines, all of which pose potential health risks.² Several chemicals in both marijuana and tobacco smoke cause cancer and reproductive toxicity: polycyclic aromatic hydrocarbons, carbon monoxide, cyanide and benzene.³ (A comparison of materials in marijuana and tobacco smoke can be found in Table 3 of a 1982 report by the Institute of Medicine.²)

Currently, evidence about the actual effects of marijuana smoke on cancer is suggestive but not conclusive. There are not enough high-quality, rigorous clinical and cohort studies of marijuana smoking, particularly those involving regular long-term use. On the basis of a rigorous scientific review of evidence that does exist,¹ California listed marijuana smoke as a carcinogen. Although based on a small number of studies, a review by the Office of Environmental Health Hazard Assessment found associations between marijuana smoking and cancers of the lung, head and neck, bladder, brain and testis.¹ It also found associations between parental marijuana smoking and childhood cancers.¹ A 2015 article that pooled results of several studies within the International Lung Cancer Consortium found little evidence of

KEY POINTS

- There are at least 33 known carcinogens in marijuana smoke.
- Marijuana smoking is associated with cancer, respiratory problems and cardiovascular disease.
- When legalized, policies should prefer safer modes of consuming marijuana over smoking.
- Widespread smoking of marijuana in public may risk renormalization of smoking in general.

increased risk of lung cancer among habitual or long-term marijuana smokers.⁴ However, the authors noted that there were considerable flaws in the few studies conducted to date and that “the possibility of potential adverse effect for heavy consumption cannot be excluded.”⁴

Marijuana smoking has been reported to increase the risk of respiratory problems, such as inflammation of the large airways, increased airway resistance, lung hyperinflation and symptoms of chronic bronchitis.⁵ Respiratory infections and pneumonia have also been reported at increased rates by marijuana smokers,³ which suggests that marijuana smoke may compromise the immunologic competence of the respiratory system.⁵ Associations with myocardial infarction (MI), atherosclerosis, stroke and transient ischemic attacks during marijuana intoxication have also been shown.^{3,5} A recent review suggested that smoking marijuana increases the risk of MI onset by a factor of 4.8 for the 60 minutes after marijuana consumption, and increases the annual risk of MI in the daily marijuana user from 1.5% to 3% per year.⁶

Does all this mean marijuana should not be legalized? Absolutely not. Prohibition has failed miserably at reducing marijuana smoking, and criminalization has had dire consequences as outlined in a recent report from the Task Force on Cannabis Legalization and Regulation.⁷ But given the health risks of smoking marijuana, safer modes of consumption should be developed further and encouraged through policy tools when marijuana is legalized. Policy approaches could include public education, health warning labels, graduated limits on supply, allowing only nonsmoked marijuana consumption in public and taxes that make smoked marijuana more expensive than alternative modes of consumption.

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In some jurisdictions, edible products make up a growing proportion of marijuana consumption. Although there are risks of overdose and of exposing children to risk, properly regulated marijuana edibles are a promising alternative to smoking. Vaping is likely less harmful than smoking marijuana, but many researchers who are evaluating electronic cigarettes hold that vaping is not benign and should not be promoted to nonsmokers.⁸ A study conducted in 2012 on the burden of disease that is attributable to marijuana use in Canada showed that, if only non-smoked forms of marijuana were consumed, at least two-thirds of deaths attributable to marijuana use that year would have been avoided.⁹

For the most part, smoking is no longer normal owing to many years of tobacco control. However, public acceptability of smoking may change again if marijuana is legalized. Public health units are reporting increasing complaints about second-hand exposure to marijuana smoke, particularly in multi-unit housing, and there are anecdotal reports of increased exposure to marijuana smoking in outdoor public spaces. Apart from the direct risks of exposure to second-hand smoke, smoking of tobacco may become acceptable by the public again.

In Ontario, nearly one-third of marijuana smokers mull or mix tobacco with their marijuana, and 31% are not regular tobacco smokers.¹⁰ Because 60% of students who use marijuana do not use tobacco,¹¹ there is a risk that as marijuana smoking becomes normalized, nontobacco smokers will be introduced to tobacco smoking through mulling. This will expose nontobacco smokers to the health risks of both marijuana and tobacco smoke, including the risks from unknown interactions between the two. A related risk is that nonsmokers are introduced to tobacco smoking through social networks of marijuana smokers, many of whom are tobacco smokers.

We know enough about the health effects of smoking marijuana to invoke the precautionary principle and recommend that it be discouraged in every way possible. There is a need for action to ensure prevention of increased tobacco smoking as marijuana is legalized. Public health policy should actively prefer nonsmoked forms of the drug.

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