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The Effects of Cannabis

by the National Academies of Science, Engineering and Medicine

Dr. Marie McCormick, Pediatrics Professor
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Chair of the Cannabis Committee



Scientists



Engineers



Physicians

In 2017, the National Academies of Science, Engineering and Medicine completed a comprehensive review of over 10,000 academic, journal published, marijuana health research studies.

Dr. Marie McCormick, Chair of the review and Professor of Pediatrics at the Harvard School of Medicine, released the following key findings* subsequent to formal approval of each of the National Academies.

1. Medicinal Value

Marijuana has medical value in pain reduction involving muscle spasms, especially related to multiple sclerosis and cancer patients experiencing chemotherapy-induced nausea and vomiting.

2. Cancer

There is no evidence that smoking marijuana increases the risk of cancer, such as consequent to tobacco use.

3. Bronchitis

Smoking marijuana on a regular basis may aggravate bronchitis and chronic coughing.

4. Cardiovascular Complications

Smoking marijuana by individuals with heart disease may increase risk of cardiovascular complications.

5. Pregnancy and Birth Weight

There is some evidence (conflicting) that smoking marijuana during pregnancy positively correlates with lower birth weight.

6. Mental Health

Some mental health problems such as schizophrenia are concurrent with use of marijuana. Marijuana may or may not “cause” the schizophrenia. Possibly, those with schizophrenic tendencies may seek marijuana intoxication as a form of self-medication. Permitting additional research in this area would be important.

7. Motor Vehicle Operation

Injury or death occurring while a person is intoxicated, particularly operating a motor vehicle, is a risk associated with marijuana use.

8. Relationship to Other Drug Use

The use of other more physically dangerous chemicals correlates with marijuana use. This includes alcohol misuse, the use of tobacco products, and the use of other drugs. Whether the marijuana use is causative or statistically concurrent with the use of other drugs is not understood.

9. Heavy Use Among Adolescents

The use, especially heavy use, by adolescents, is associated with both academic performance problems and socialization problems. Again, both may be concurrent as opposed to causative.

10. Chemical Dependency

Chronic and compulsive use can evolve into dependency problems, with adolescents being especially at risk.

*Source: National Academies of Science, Engineering and Medicine. www.nap.edu/catalog/24625/the-effects-of-cannabis-and-cannabinoids

Addendum

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Following the 2017 publication of the National Academies' report there have been several emerging perspectives regarding our concerns regarding risk.

Edibles (including beverages)

Introduction of edibles has greatly expanded and there are special concerns regarding individuals, especially children, inadvertently ingesting psychoactive edibles. State statutes have attempted to ensure warnings including visuals and statements warning of the intoxicating properties and guidelines for discouraging access by children. Similarly, there have been emergency room admissions relative to panic related to heavier doses than anticipated in the use of edibles and consequent unpleasant reactions to unanticipated and disconcerting levels of intoxication. Ingestion as opposed to inhalation is more often associated with inadvertently taking more potent doses.



Automobile Accidents

Automobile accidents, and likely other accidents, relating to potentiation as a result of marijuana use in conjunction with other psychoactive compound, most often alcohol have occurred. The state of intoxication as a result of multiple intoxicants has been connected to increased motor vehicle accidents.

Emergency Room Admissions

With the legalization of adult use there has been more reporting of emergency room admissions relating to marijuana use. The complaints involve psychotic behavior and gastrointestinal complaints. Analysis of emergency room admissions available as a result of adult legalization should be undertaken. With legalization both patients and medical personnel are more likely to openly analyze negative experiences with marijuana use.

Twin Study

In 2021 the University of Minnesota's Twin Studies Program compared impact of marijuana use on 364 sets of identical twins. The study compared those who used marijuana with those who did not. Since identical twins share similar genetics and upbringing this analysis was important. The research identified no cognitive decline or mental health problems between those who used marijuana in those who did not. There was a slight increase in academic performance and college attendance among those who did not use marijuana. Dr. Jonathan Schaeffer, lead author of the research, hypothesized that, despite the similarities, a third factor may have influenced both the use of marijuana and the degree of focus on academic pursuits.

Anesthesia Impact

In 2022/3 the journal *Frontiers in Psychiatry* published a concern/warning for oral surgeons and physicians performing endoscopy regarding patients' use of marijuana and CBD. A stronger degree of sedation may be necessary. The journal documented several situations where marijuana users required substantially more sedation, often fentanyl and ketamine, during surgical operations and in recovery. They made a strong recommendation that, particularly since marijuana use is more accepted, pre-surgery interviews should include questions regarding marijuana/CBD use. Specifically, they suggested requesting use levels i.e., daily, weekly, and monthly. Obviously further research is necessary.