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Controversial Risks and Values of Marijuana Use

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Many American adults use marijuana. Presumably, if there were serious health consequences resulting from widespread use, we would have identified epidemiological evidence of harm. Yet, we also live in a world of poorly understood disease and risk, and there may exist undetected harm as a consequence of marijuana use.

We have confidence in the landmark 2017 meta-research by the Academies of Engineering, Science, and Medicine. However, we believe it also makes sense to describe contemporary marijuana use issues regarding both potential risks and values.

Anyone, particularly young persons, searching for internet guidance on marijuana use will likely encounter the following comments on risk and benefit. Often these perspectives are described as absolutes based on the limited research, but given the level of interest and concern, we felt an obligation to comment.

The following are 10 often expressed areas of risk concern and 10 often mentioned quality of life and health promotion values sometimes attributed to marijuana use. In discussing values, we felt it necessary to provide journal citations when practical.

10 MOST OFTEN MENTIONED RISKS

1. Youthful Use

The most dangerous characteristic of use involves unwise and reckless behavior which is understandably a much greater risk among young people.

Similarly, data published in the *Journal of the American Medical Association Pediatrics* substantiates a greater risk of compulsive use by younger users. The 12 to 17 age categories appeared more likely to both compulsive and abusive use marijuana than 18 to 25 year olds.

The impact on overall intelligence later in life among heavily using adolescents appears to correlate. Substantial data indicates that marijuana use is not causative, but concurrent with other, both social and congenital, developmental problems. The heavy use of marijuana among adolescents is most probably a signal of physical or social stressors which also impact self-actualization later in life. Youthful heavy use of marijuana represents both risk in itself and an indication of other problems.

2. Destabilizing and/or Psychotic Reactions to Intoxication

Especially among youth, but among all users, depending upon the dose, the setting, and the user's personality there can be a destabilizing behavioral reaction to the marijuana intoxication experience. This may involve panic, paranoia, or

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10 MOST OFTEN MENTIONED VALUES

1. Reducing Blood Pressure

In low doses, marijuana may lower blood pressure. Although not presently prescribed for blood pressure control, there is optimism that a pharmaceutical based on cannabis may support the control of blood pressure. (www.ncbi.nlm.nih.gov/pmc/articles/PMC5470879/)

2. Reduction of Discomfort/Pain

The Rockefeller Institute of Medical Research created a meta study which documented substantial impact of pain mitigation. Based on the high incidence of collateral damage relative to prescriptions of oxycodone and other opiates, their research was of special interest and influenced the legalization of medical marijuana in several states. Under the right conditions, and with the proper dosage, it is possible that marijuana-based compounds can reduce the default to opiates and other drugs for pain control. (www.ncbi.nlm.nih.gov/pmc/articles/PMC3371734/)

3. Preventing Relapse in Drug and Alcohol Addiction

In 2018 meta research involving both pre 1970 and recent studies supported the possibility that, used correctly, there may be a value in employing cannabis-based products in conjunction with substance abuse counseling. There also have been criticisms of this approach and additional

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10 MOST OFTEN MENTIONED RISKS (con't)

depression and may be described as a psychotic reaction.

3. Progression to Use of Other More Dangerous Drugs including Fentanyl

There is conflicting research on marijuana as a “gateway” drug. Given the millions of recreational users and the comparatively small number of users of other controlled substances, causation seems statistically unlikely. To the extent criminals are controlling marijuana distribution there may be a greater probability of exposure to other more dangerous illicit drugs. In the case of fentanyl, which is a leading cause of death for adults ages 18 to 45 in the United States, the gateway seems to be the lawful prescription of opiate compounds for pain. However, in some situations, introduction to marijuana as an illegal controlled substance may pave the way for the use of other illicit drugs. There are both conflicting research and perspectives on marijuana as a gateway drug.

4. Chemical Dependency

There is measurable tissue tolerance and metabolic change following heavy use of marijuana over an extended period. This creates physical withdrawal symptoms. However, the withdrawal characteristics are more oriented toward discomfort and agitation than the profound pain associated with “drug withdrawal” from physiological dependence on alcohol, tobacco, or opiates.

Psychological chemical dependency from compulsive marijuana use can become far more debilitating. The breaking of the compulsive reliance on the feelings and sensations of marijuana intoxication may require formalized chemical dependency response or treatment.

5. Accidents, Especially Motor Vehicle Collisions

Before the legalization of marijuana, there was limited testing of the presence of marijuana following a motor vehicle accident. Following legalization in some states, there has been post-accident blood testing. Data indicates that marijuana contributes to motor vehicle accidents. More specifically, if there is potentiation involving more intoxicating substances than marijuana alone, most typically alcohol, there appears to be a more pronounced danger. This is consistent with our understanding of intoxication involving two different mind-altering compounds creating significantly altered perceptions and behavior. Any complex or dangerous activities should not be undertaken in conjunction with marijuana use and this especially relates to motor vehicle operation.

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10 MOST OFTEN MENTIONED VALUES (con't)

research is necessary.

(www.ncbi.nlm.nih.gov/pmc/articles/PMC6098033/)

4. Treatment of Anxiety Disorders

Anxiety disorders of interest include, panic, social anxiety, obsessive-compulsive disorder, and most recently post-traumatic stress disorder. There is no longer any reasonable question that, while dosage and use protocol require further study, cannabis products may provide value in addressing anxiety disorder.

5. Treating Gastrointestinal Disorders

Recently published research indicates that cannabinoids may be effectively used to address G.I. disorders such as irritable bowel syndrome, inflammatory bowel disease, and even ulcerative colitis. Additional research will be important. (www.ncbi.nlm.nih.gov/pmc/articles/PMC7246936/)

6. Seizure Prevention and Mitigation

For decades, there has been anecdotal information regarding seizure prevention supported by European research. At this point, it seems certain that epilepsy and other seizure syndromes are sometimes positively addressed. (www.ncbi.nlm.nih.gov/pmc/articles/PMC7012327/)

7. Cancer

The ability of cannabis and cannabinoid products to alleviate the effects of chemotherapy has been accepted. More recently there has also been research indicating that there may be an enhancement to some immune systems which may prevent cancer cell growth in cervical and other cancers. Oncology research is ongoing. (www.ncbi.nlm.nih.gov/pmc/articles/PMC5009497/) (www.ncbi.nlm.nih.gov/pmc/articles/PMC6928757/)

8. Public Safety Regarding Collateral Crime

There are some comparative data based on the Uniform Crime Report following the legalization of recreational marijuana in Colorado and Washington State. In May 2020 the data regarding violent and property crime seem to show that there was a reduction in criminal activity including states adjacent to Colorado and Washington. Other factors may have influenced criminal behavior. The period studied (2003–2017) also involved economic impacts that would tend to influence crime rates.

There was not any meaningful increase in collateral criminal activity and possibly a decrease in violent and property crime. The exception may have involved motor vehicle accidents. (<https://doi.org/10.1177/0022042620921359>)

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10 MOST OFTEN MENTIONED RISKS (con't)

6. Hyperemesis-Abdominal Discomfort and Vomiting

Particularly since legalization, there have been a number of emergency room visits regarding abdominal discomfort following the use of marijuana. The characteristics of this poorly understood gastrointestinal discomfort and inability to digest food are frequent enough so research is being undertaken to try to understand the connection.

7. Neonatal Exposure

Unlike alcohol and other drugs that cross the placenta during pregnancy marijuana does not appear to be a teratogen causing birth defects. It does, in some research correlate with reduced birthweight, which could have negative consequences. Like alcohol, tobacco, and opiates marijuana should not be used during pregnancy or when nursing.

8. Cardiovascular Health

Marijuana use is associated with an accelerated heart rate which could be problematic for individuals with cardiovascular challenges. There is ironically conflicting data regarding blood pressure with some research indicating that marijuana use increases blood pressure and other research indicating that it reduces blood pressure. The variation may relate to dosage and the users' metabolism. Those with cardiovascular concerns should understand that marijuana use may represent a risk.

9. Pulmonary Health

Inhaling marijuana represents an irritant to lung tissue. However, unlike tobacco there is much less use-exposure and only fractional production of benzo (a) pyrene. Consequently, there is a significantly reduced burden of mutagenic heated compounds debilitating lung function. Discomfort and bronchiole irritation is a reality, but lung tissue damage associated with marijuana does not appear to be significant.

10. Testicular Cancer

The incidence and prevalence of most cancers have declined as the use of marijuana increased. The exception was testicular cancer, which has been increasing over the last 30 years, although the rate of increase has been reduced over the last decade. Based on several studies there have been concerns regarding the relationship between marijuana use and the incidence of testicular cancer.

We were able to identify only three published studies in major public health and medical journals regarding this potential relationship. The most significant study involved an analysis of nearly 50,000 Swedish males who were followed from 1969–1970 to 2011. The incidence of testicular cancer

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10 MOST OFTEN MENTIONED VALUES (con't)

9. Marijuana and Post–Secondary Students

There is substantial stress confronting post-secondary students. There was a hypothesis that marijuana use may alleviate stress and promote health-oriented behaviors supporting a successful post-secondary experience.

Researchers at Boston University studied the behavior of 321 students as it related to marijuana use and health and safety behaviors. Except for reduced "hazardous use of alcohol" among the marijuana using students, there was greater concurrent use of a variety of other substances, especially alcohol and tobacco. There was no indication that marijuana use was associated with health-promoting behaviors.

As the researchers reported regarding marijuana, "Concomitant substance-related risks associated with marijuana... (provided) no support to the view that students are more likely to engage in health-promoting behaviors."

10. Potentially Valuable Altered States

Following the 1970 Federal legislation designating marijuana a Schedule I substance, limited medical use or research into use was allowed. There had been substantial published research on marijuana and other hallucinogenic drugs relating to supporting mental health-oriented counseling.

Presently, there is substantial research supported by pharmaceutical houses involving the creation of cannabis-based medical compounds primarily for use in conjunction with mental health counseling.

The University of California at San Francisco School of Pharmacy has published on the use of hallucinogens as antidepressants. They speculate that these compounds may have a greater impact than many current antidepressants. These drugs, including marijuana, are presumed to have value for treating depression, post-traumatic stress disorder, end of life counseling, and supporting cures from other addictions. The mechanism of mental health interaction typically involves deferring to an altered state of consciousness. The user would presumably come to understand the world and their place in it from a different perspective. Troubled individuals may see and understand things in a more favorable and healthier new light.

This altered state of consciousness has also been described as promoting potentially valuable insight among non-stressed individuals. The Cornell astronomer and philosopher Carl Sagan published extensively on his use of marijuana to help gain insight into complex concepts in physics and astronomy. Similarly, Harvard professor of psychiatry, Lester Grinspoon published on the importance and value of marijuana providing fresh perspectives to a healthy mind.

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10 MOST OFTEN MENTIONED RISKS (con't)

is approximately 1 in 250 males in the general population and there was no statistically significant relationship between general marijuana users and testicular cancer. However, when the relationships between, "heavy-use" and testicular cancer were calculated there was a positive relationship. There were 879 heavy marijuana users (1.8%) among the 50,000 in the initial group. Considering the limited numbers of expected cases, the relationship has limited statistical viability. As the study states, "Our results should be interpreted with caution, given the number of important study limitations."

However, while there was no relationship between all categories of marijuana use to testicular cancer, for those involved in heavy use there is a weak statistical inference of a relationship.

10 MOST OFTEN MENTIONED VALUES (con't)

The impact of marijuana use on transcendental matters including religion is well documented. Marijuana was used for religious purposes in antiquity involving early Buddhism, and Shintoism, and is presently used in Christian ceremonies among the Maya in Central America. Marijuana is identified as a divine and sacred substance among the Christian Rastafari in Barbados. In 2022 archaeologists analyzed 3000 year-old religious altars in Judea. Ancient Hebrew priests and prophets were burning a combination of frankincense, animal fat, and marijuana, presumably inhaling the smoke during religious ceremonies.

Science is not in a place where it can reasonably quantify the value or risks of altered state of consciousness, but some seem to find marijuana intoxication contributing to both secular and religious contemplations.

Conclusion of the Potentially Negative and Positive Characteristics of Marijuana

The complex human pursuit of intoxication is not understood. We do know that the desire for mood and mind-altering substances is prevalent in nearly all societies and for many, marijuana is and has been, a drug of choice.

We also know that marijuana use can potentially have value as well as create harm. How we choose to approach its use and advise our youth regarding use, is one of the most significant challenges our time. Marijuana use is institutionalized, but how we best control that use, through regulation and persuasion, is an important work in progress.