

## **Testimony of Emily M. French, Communities that Care Educational Outreach of Southeast PA**

Good afternoon. My name is Emily French. I thank you for inviting me to appear today as a member of the Communities That Care Educational Outreach Initiative to provide informational materials about the science of medical marijuana and marijuana use. Medical marijuana generally refers to the whole unprocessed marijuana plant or its extracts. Neither the plant nor the extracts are approved or recognized as medicine by the US Food & Drug Administration (FDA). For the FDA to approve medicine, it requires large scale clinical trials to document the benefits and risks.

What are the components of marijuana? Within the marijuana plant, there are 100 of them, known as chemical cannabinoids. There are two primary types of therapeutic interest, cannabinoids THC and CBD. The cannabinoid THC is the psychoactive element that produces a high. CBD is non-psychoactive and will not produce a high.

The FDA has conducted studies and approved two medications for treatment to address the side effects of chemotherapy and AIDS. To approve marijuana based medicines the FDA would require controlled trials to fulfill the requirements to meet effectiveness and safety. Within these trials, there would be established doses and regimens for use and a regulated system of prescribing and dispensing. At the conclusion of the trials, they would have documentation of benefits and risks. FDA approved marijuana produced for approved medicine would have been grown in pesticide free greenhouses with extracted oils, high in CBD and 98% THC free.

The alternative to FDA approved medicines is Medical Marijuana. With this form of marijuana there are limited trials, no established doses and regimens for use, and no doctors recommending action or certifying need. This product is sold at dispensaries or budtenders. Medical marijuana grown in an uncontrolled environment may be contaminated with neurotoxic pesticides, is high in the mind altering THC while low in the CBD.

Another consequence of medical marijuana is how easily it can be diverted from licensed users to teens. In states with legal medical marijuana, teens report it is "fairly easy" or "very easy" to access. States with legal medical marijuana lead the nation with the highest rate of past month marijuana use among 12 – 17 year olds. As the debate on medical marijuana continues trends show that youth are increasing their marijuana use, but their perceived risk of harm is decreasing. The 2013 Pennsylvania Youth Survey shows a slight decrease in the perceived risk of harm compared to 2011. In other words, young people do not perceive a risk of harming themselves by using marijuana.

A series of articles has been published in the last week of March of this year in the Colorado Springs Gazette which examines what has happened with the regulation of medical marijuana in that state and then the subsequent legalization for recreational use. With medical marijuana, physicians were to carefully evaluate patients' medical conditions and then approve cards for medical marijuana. However, that oversight has just not been consistent within the medical community. There have been reports of an OB/GYN approving cards for male patients and pediatricians approving cards for adult

patients. With this lack of oversight here and the number of dispensaries statewide, diversion to youth has been a real problem for Colorado. About 3/4 of Denver area teens in treatment said that they used somebody else's medical marijuana an average of 50 times. (Thurstone, Christian, M.D. "Medical Marijuana Diversion and Associated Problems in Adolescent Substance Abuse Treatment." *Drug and Alcohol Dependence* 118 (2011)489-492).

When one considers this new availability, the following statistic is particularly concerning:

Studies show that marijuana is particularly harmful to the developing brains of young people, causing long-term impairment in cognitive development. Adolescents under the age of 18 who use marijuana more than once a week may lose up to 8 IQ points, which may put them at a disadvantage when compared to peers. Lower IQ leads to poor academic performance due the negative effects on motivation, memory, and learning. It may make it more difficult for them to get jobs and be productive members of society.

Data from the National Institute on Drug Abuse states that 1 in 6 adolescents that try marijuana become addicted. Among youth receiving substance abuse treatment, marijuana accounts for the largest percentage of admissions: 74 percent among those aged 12–14, and 76 percent among those 15–17. This youth addiction statistic is based on data from several decades ago when marijuana concentrations of THC, the psychoactive cannabinoid, were about a third of what is present in marijuana today. (from white paper by National Institute on Drug Abuse - January 2015)

Marijuana impacts public safety by affecting user's short-term memory, judgment, mental aptitude, and motor coordination. It is the most prevalent illegal drug in impaired driving and motor vehicle crashes. Not only does it affect a person's ability to operate a vehicle, it has consequences on employment. With more than 6,000 companies nationwide requiring pre-employment drug test there is difficulty filling open jobs. Many companies also perform random drug screening after employment.

Scientists do not yet know whether the use of marijuana causes chronic mental illness. High doses can induce an acute psychosis (disturbed perceptions and thoughts, including paranoia) and/or panic attacks. In people who already have schizophrenia, marijuana use can worsen psychotic symptoms, and evidence to date suggests a link between early marijuana use and an increased risk of psychosis among those with a preexisting vulnerability for the disease. It has also been linked to mental health problems such as depression, anxiety, suicidal thoughts among adolescents, and personality disturbances, including a lack of motivation to engage in typically rewarding activities.

As you look at this matter, look to other states preceding Pennsylvania. States like Colorado where in a 6 year window they experienced an increase in the number of medical marijuana cardholders from 1,000 to 108,000 and the number of dispensaries rose from 0 to 532.

In closing, I would like to highlight the statements from several credible medical societies and other organizations. Thank you for the opportunity to present this information to aid you in your decision-making process:

The Pennsylvania Association of County Drug and Alcohol Administrators (PACDAA): PACDAA is extremely concerned about the public health impact associated with any change in current state or federal laws governing marijuana. Simply put, any increase in access to marijuana will lead to expanded use by all age groups, and will in turn lead to an increase in negative consequences for individuals, families, and communities as a result of this expanded use.

("Position Paper Regarding Legalization of Marijuana for Medicinal Purposes," Pennsylvania Association of County Drug and Alcohol Administrators, November, 2014).

***American Cancer Society:***

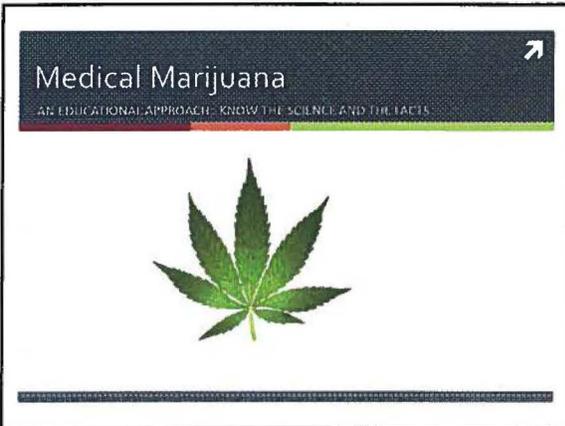
"While it shows promise for controlling cancer pain among some patients, there is still concern that marijuana may cause toxic side effects in some people and that the benefits of THC must be carefully weighed against its potential risks. There is no available scientific evidence from controlled studies in humans that cannabinoids can cure or treat cancer."

***American Society of Addiction Medicine:*** Marijuana should be subject to the same standards that are applicable to other prescription medications, and these products should not be distributed or otherwise provided to patients unless and until such products or devices have received marketing approval from the Food and Drug Administration.

***The American Psychiatric Association (APA)***

There is no current scientific evidence that marijuana is in any way beneficial for the treatment of any psychiatric disorder. Current evidence supports...a strong association of cannabis use with the onset of psychiatric disorders. (2) Further research on the use of cannabis-derived substances as medicine should be encouraged and facilitated by the federal government. The adverse effects of marijuana...must be simultaneously studied. (3) No medication approved by the FDA is smoked.

Thank you for the opportunity to present this information to aid you in your decision-making process.



The purpose of this presentation is to educate people about the science of medical marijuana and marijuana use.

WHAT DOES "MEDICAL MARIJUANA" MEAN?

➤ The term "medical marijuana" is generally used to refer to the whole unprocessed marijuana plant or its crude extracts, which are not recognized or approved as medicine by the U.S. Food and Drug Administration (FDA).

National Institute of Drug Use: Is Marijuana Medicine? December 2014.

***Why isn't the Marijuana Plant An Approved Medicine?***

The FDA requires carefully conducted studies in large numbers of patients. There haven't been enough large scale clinical trials showing that the benefits outweigh the risks.

THE COMPONENTS OF MARIJUANA:

- The active chemicals in marijuana are called cannabinoids.
- The marijuana plant has over 100 cannabinoids.
- The two main cannabinoids of therapeutic interest are THC, delta-9-tetrahydrocannabinol, and CBD, cannabidiol.
  - THC is psychoactive and produces a high.
  - CBD is non-psychoactive.
  - THC and CBD may prove useful for treating a range of illnesses or symptoms.

National Institute of Drug Use: Is Marijuana Medicine? December 2014.

Scientific study of cannabinoids has led to the development of two FDA-approved medications already, and is leading to the development of new pharmaceuticals that harness the therapeutic benefits of cannabinoids while minimizing or eliminating the harmful side effects (including the "high") produced by eating or smoking marijuana leaves.

National Institute of Drug Use: Is Marijuana Medicine? December 2014.

### What Medications Contain Cannabinoids?

- An FDA-approved drug, in pill form, called **Dronabinol (Marinol®)** contains THC and is used to treat nausea caused by chemotherapy and wasting disease (extreme weight loss) caused by AIDS.
- Another FDA-approved drug called **Nabilone (Cesamet®)** contains a synthetic cannabinoid similar to THC and is used for the same purposes.
- A drug called **Sativex®**, which contains approximately equal parts THC and CBD, is currently approved in the UK and several European countries to treat spasticity caused by multiple sclerosis (MS), and it is now in Phase III clinical trials in the U.S. to establish its effectiveness and safety in treating cancer pain.

➤ National Institute of Drug Use: Is Marijuana Medicine? December 2014.

### Medical Marijuana vs. FDA Approved Marijuana-Based Medicines

Legalized Medical Marijuana	FDA Approved Marijuana-Based Medicines
No Proven Safety No Proven Efficacy No Established Dose or Regimen No Randomized Controlled Trials No Recall System Doctors Recommend or Certify Dispensaries Sell Buttenders Dispense	Safe Effective Established Dose and Regimen Randomized Controlled Trials Recall System Doctors Prescribe Pharmacies Sell Pharmacists Dispense

\*Marijuana-based medicines are never smoked.

"The Difference Between Medical Marijuana and Marijuana-Based Medicines: A Guide For Journalists and Policymakers," National Families In Action, January 2015.

### Comparison Of Forms of Cannabidiol (CBD) Oil

Charlotte's Web (Medical Marijuana)	Epidiolex® (Marijuana-Based Medicine)
Hasn't been approved by the FDA	A marijuana-based medicine seeking FDA approval – <i>in clinical trials</i> .
May be contaminated with neurotoxic pesticides, which could be dangerous to the sensitive brains of patients with epilepsy	Extracted from marijuana grown without pesticides in controlled glasshouses by GW Pharmaceuticals in Great Britain
Has been legalized in 11 states for use with epilepsy, despite lack of FDA approval	Being administered in some states to children with epilepsy via FDA expanded access programs
High CBD; Low THC, but some concern that children may be exposed to enough THC to cause intoxication.	98% pure, High CBD, zero to infinitesimal amounts of THC

"The Difference Between Medical Marijuana and Marijuana-Based Medicines: A Guide For Journalists and Policymakers," National Families In Action, January 2015.; "Everything You Need to Know About CBD," Smart Approaches to Marijuana.

### Are "Medical" and "Street" Marijuana Different?

➤ Most marijuana sold in dispensaries as medicine is the same quality and carries the same health risks as marijuana sold on the street.

NIDA: Is Marijuana Medicine? December, 2014.

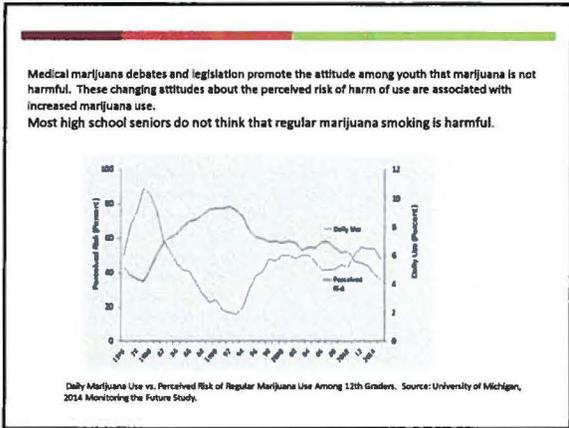
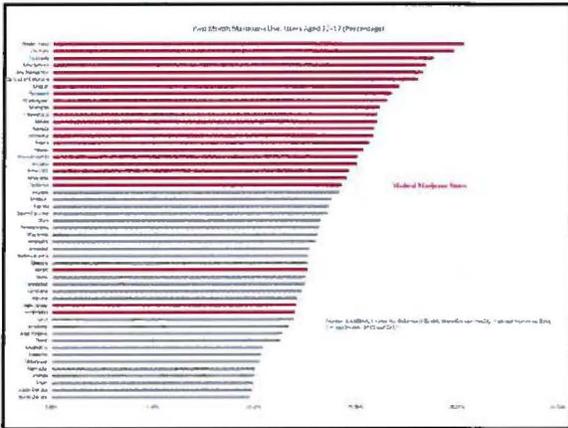
### Medical Marijuana Is Easily Diverted to Youth

- Teens who know somebody with a medical marijuana license are more likely to report that it is "fairly easy" or "very easy" to access marijuana than teens who don't know someone with a medical marijuana license.
- 74% of Denver area teens in treatment said that they used somebody else's medical marijuana an average of 50 times.

Thurstone, Christian, M.D. "Medical Marijuana Diversion and Associated Problems in Adolescent Substance Abuse Treatment." Drug and Alcohol Dependence 118 (2011):489-492. Salamonsen-Savati, Stacey et al., "Medical Marijuana Use Among Adolescents in Substance Abuse Treatment," Journal of American Academy of Child and Adolescent Psychiatry, 2012, 51 (7): 694-702.

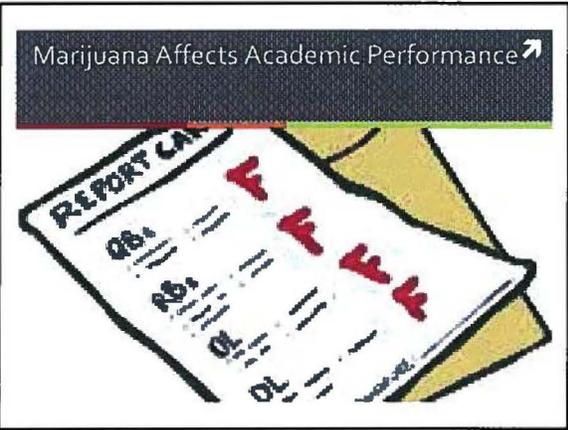
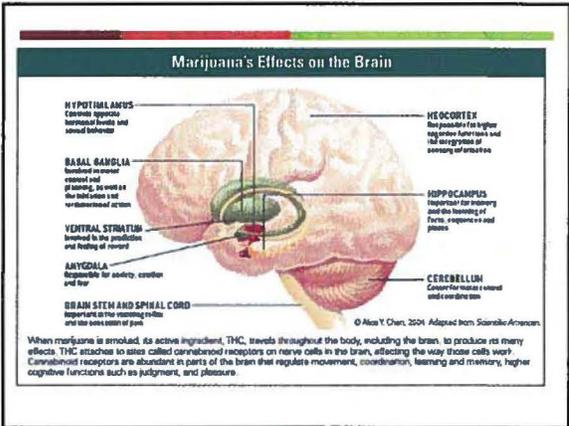
### "Medical marijuana" states are clustered at the top of the list in terms of past month use, drug addiction, and abuse among 12 – 17 year olds.

1 United States Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Office of Applied Studies. National Survey on Drug Use and Health, 2009.



**Marijuana is particularly harmful to the developing brains of young people, causing long-term impairment in cognitive development. Adolescents under the age of 18 who use marijuana more than once a week may lose up to 8 IQ points, which may put them at a disadvantage when compared to their same-age peers for years to come. The lower IQ may affect future education level, income, health, and lifespan.**

National Institute of Drug Abuse, *Is Marijuana Medicine?*, December 2014, Winter, Michael, "Study: Pot Use Before 18 Harms Adult IQ, Memory," USA Today, August 27, 2012.



- WHY?**
- Because marijuana negatively affects motivation, memory, AND learning!
  - Youth with an average grade of D or less were four times as likely to have used marijuana in the past year than youth with an average grade of A.
- National Institute on Drug Abuse: *Marijuana: Facts Parents Need To Know*, March 2014. <http://www.drugabuse.gov/publications/marijuana-facts-parents-need-to-know/talking-to-your-kids-communicating-9866/>
- Office of Applied Studies, Substance Abuse and Mental Health Services Administration, SAMHSA's National Household Survey on Drug Abuse Report, Marijuana Use Among Youth, July 19, 2002.

**1 in 6 teens become addicted**

1 in 10 adults and 1 in 6 adolescents who try marijuana will become addicted to it.



National Institute on Drug Abuse: [Marijuana: Facts Parents Need To Know](http://www.drugabuse.gov/publications/marijuana-facts-parents-need-to-know), March 2014.  
http://www.drugabuse.gov/publications/marijuana-facts-parents-need-to-know/talking-to-your-kids-communicating-risks

Among youth receiving substance abuse treatment, marijuana accounts for the largest percentage of admissions: 74 percent among those aged 12–14, and 76 percent among those 15–17.

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http://www.drugabuse.gov/publications/marijuana-facts-parents-need-to-know/talking-to-your-kids-communicating-risks

**RISKS OF MARIJUANA FOR ALL USERS**

- *Impairs short-term memory*
- *Alters judgment and decision-making*
- *Affects mood – causes severe anxiety, paranoia, and even psychosis with high doses*
- *Reduces motor coordination and slows reaction time, making driving difficult.*
- *Use during pregnancy may be associated with neurological problems in babies and impaired school performance in later childhood.*
- *Can cause or worsen respiratory problems.*

National Institute of Drug Abuse: [Is Marijuana Medicine?](http://www.drugabuse.gov/publications/marijuana-facts-parents-need-to-know) December 2014

**Marijuana Affects Public Safety**



**Why?**

Because marijuana is the most prevalent illegal drug detected in impaired drivers, fatally injured drivers, and motor vehicle crash victims.<sup>1</sup>

National Highway Traffic Safety Administration. Drug Involvement of Fatally Injured Drivers. U.S. Department of Transportation Report No. DOT HS 811 315. Washington, DC: National Highway Traffic Safety Administration, 2010.

In a study of seriously injured drivers admitted to a Level-1 shock trauma center, more than a quarter of all drivers tested positive for marijuana.<sup>1</sup>

<sup>1</sup> Romano, E. and Voas, R. B., *Journal of Studies on Alcohol and Drugs*, Drug and Alcohol Involvement in Four Types of Fatal Crashes, June 2011.

## Marijuana Affects Jobs ↗

**WHY?**

- Because more than 6,000 companies nationwide and scores of industries and professions require a pre-employment drug test.

The Definitive List of Companies That Drug Test, March 2010. Available: [www.testclear.com](http://www.testclear.com)

## Because 6% of high school seniors smoke marijuana every day<sup>1</sup>, rendering them virtually unemployable.

<sup>1</sup> Johnson, L. D., O'Leary, P. M., Bachman, J. G., & Schulenberg, J. E. Monitoring the Future national survey results on drug use: 2010, Volume I: Secondary school students. Ann Arbor: Institute for Social Research, The University of Michigan. Available: <http://www.monitoringthefuture.com/publications/monrpt010101a.pdf>

## Marijuana and Mental Illness

➤ Although scientists do not yet know whether the use of marijuana causes chronic mental illness, high doses can induce an acute psychosis (disturbed perceptions and thoughts, including paranoia) and/or panic attacks. In people who already have schizophrenia, marijuana use can worsen psychotic symptoms, and evidence to date suggests a link between early marijuana use and an increased risk of psychosis among those with a preexisting vulnerability for the disease.

<sup>1</sup> National Institute on Drug Abuse: [Marijuana: Facts Parents Need To Know](#), NIH Publication NO 10-4036, p.7, March 2011.

## Associations have also been found between marijuana use and other mental health problems, such as depression, anxiety, suicidal thoughts among adolescents, and personality disturbances, including a lack of motivation to engage in typically rewarding activities.

NIDA: Drug Facts: Marijuana, January 2014. <http://www.drugabuse.gov/publications/drugfacts/marijuana>

## Marijuana Can Make Post Traumatic Distress Symptoms Worse

➤ Medical marijuana can exacerbate symptoms. Researchers found that veterans using marijuana were associated with having **HIGHER** levels of PTSD symptoms, including PTSD avoidance/numbing and hyper arousal symptoms.

➤ Research shows that Marijuana use can cause increased paranoia, anxiety, and psychosis in some people

Brown-Miller, H.D., Boden, M.T., Vujanovic, A.A., & Drexler, A.D. (2011, December 18). "Prospective Investigation of the Impact of Cannabis Use Disorders on Posttraumatic Stress Disorder Symptoms Among Veterans in Residential Treatment." *Psychological Trauma: Theory, Research, Practice, and Policy*. This study was done with the National Center for PTSD and Center for Health Care Evaluation at the Palo Alto VA Health Care Center.

## MARIJUANA CAN BE ADDICTIVE

- Marijuana is estimated to produce addiction in approximately 9 percent, or about 1 in 11.
- 25–50 percent among daily users, 25-50% become addicted.
- 4.3 million of the more than 7.3 million people who abused or were addicted to any illegal drug in 2012 were dependent on marijuana.

NIDA: Marijuana Facts Parents Need to Know, March 2014. <http://www.drugabuse.gov/publications/marijuana-facts-parents-need-to-know/talking-to-your-kids-communicating-risks>

# LESSONS LEARNED FROM COLORADO, PRE-RECREATIONAL

## LESSONS LEARNED FROM COLORADO

### Increased teen use

Marijuana use among Colorado teens is currently:

- **10th** highest in the nation
- **50%** above national average

Colorado: 10.2%  
National average: 7.0%

National Survey on Drug Use and Health, 2011 (ICPSR 35509). Substance Abuse and Mental Health Data Archive.

## Denver high schools

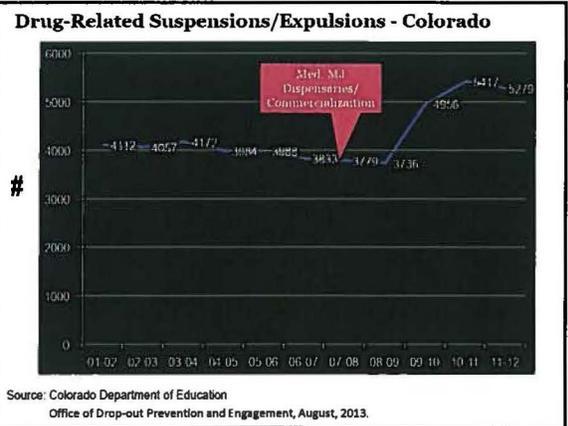
- 29% of Denver high school students used marijuana in the last month
- If Denver were an American state, it would have the **HIGHEST** public high school current use rates in the country

Healthy Kids Colorado Survey, 2012. Colorado Department of Health and Environment.

## Colorado post-2009

- Passed medical marijuana in 2001
- But no dispensaries until the mid-2000s
- Between 2006 and 2012, medical marijuana cardholders rose from **1,000 to over 108,000**
- The number of dispensaries rose from **0 to 532**

Healthy Kids Colorado, 2012.



# STATEMENTS FROM SOCIETIES AND ORGANIZATIONS

**Epilepsy Experts Call for More Research Into Medical Marijuana**

Dr. Elson So, President of the American Epilepsy Society recently stated:

"Little is known about the long term effects of using marijuana in infants and children on memory, learning and behavior.

This is of particular concern because of both clinical data in adolescents and adults and laboratory data in animals demonstrating potential negative effects of marijuana and its derivatives on their critical neurological functions.

Such safety concerns coupled with a lack of evidence of efficacy in controlled studies result in a risk/benefit ratio that does not yet support use of marijuana for treatment of seizures."

Available: <http://www.epilepsy.com/2011/04/22/epilepsy-experts-call-for-more.html>

**The American Academy of Pediatrics (AAP):**

"Any change in the legal status of marijuana, even if limited to adults, could affect the prevalence of use among adolescents. While it supports scientific research on the possible medical use of cannabinoids as opposed to smoked marijuana, it opposes the legalization of marijuana."

Committee on Substance Abuse and Committee on Adolescence. "Legalization of Marijuana: Potential Impact on Youth." Pediatrics Vol. 113, No. 6 (June 6, 2004): 1825-1826. See also, Joffe, Alain, MD, MPH, and Yancy, Samuel, MD. "Legalization of Marijuana: Potential Impact on Youth." Pediatrics Vol. 113, No. 6 (June 6, 2004):e632-e638h.

**American Glaucoma Foundation:**

"Marijuana, or its components administered systemically, cannot be recommended without a long term trial which evaluates the health of the optic nerve," said the editorial. "Although marijuana can lower IOP, its side effects and short duration of action, coupled with a lack of evidence that its use alters the course of glaucoma, preclude recommending this drug in any form for the treatment of glaucoma at the present time."

Aug. 10, 2009 "Position Statement on Marijuana and the Treatment of Glaucoma," Available on its website and confirmed as current position on Apr. 7, 2014.

**The Pennsylvania Association of County Drug and Alcohol Administrators (PACDAA):**

PACDAA is extremely concerned about the public health impact associated with any change in current state or federal laws governing marijuana. Simply put, any increase in access to marijuana will lead to expanded use by all age groups, and will in turn lead to an increase in negative consequences for individuals, families, and communities as a result of this expanded use.

"Position Paper Regarding Legalization of Marijuana for Medicinal Purposes," Pennsylvania Association of County Drug and Alcohol Administrators, November, 2014.

**The American Medical Association (AMA)**

has called for more research on the subject, with the caveat that this "should not be viewed as an endorsement of state-based medical cannabis programs, the legalization of marijuana, or that scientific evidence on the therapeutic use of cannabis meets the current standards for a prescription drug product." Furthermore, AMA believes (1) cannabis is a dangerous drug and as such is a public health concern; (2) sale of cannabis should not be legalized.

"AMA Policy: Medical Marijuana," [10 KB], Nov. 10, 2009; reaffirmed November, 2013.

**The FDA medication approval process**

is a very rigorous process that helps ensure effectiveness, standardization of dosage and administration, and safety. Declaring marijuana a medication without due process is, in my opinion, to practice a poor and unsafe standard of medicine."

Dr. Neil Capretto, Medical Director of Gateway Rehabilitation, Aliquippa, PA

American Cancer Society says:

"While it shows promise for controlling cancer pain among some patients, there is still concern that marijuana may cause toxic side effects in some people and that the benefits of THC must be carefully weighed against its potential risks. There is no available scientific evidence from controlled studies in humans that cannabinoids can cure or treat cancer."<sup>[35]</sup>

**American Society of Addiction Medicine:**  
Marijuana should be subject to the same standards that are applicable to other prescription medications, and these products should not be distributed or otherwise provided to patients unless and until such products or devices have received marketing approval from the Food and Drug Administration.

American Society of Addiction Medicine (ASAM) 44th Annual Medical-Scientific Conference, Press Conference, Presented April 25, 2013.

**The American Psychiatric Association (APA)**  
States:

(1) There is no current scientific evidence that marijuana is in any way beneficial for the treatment of any psychiatric disorder. Current evidence supports...a strong association of cannabis use with the onset of psychiatric disorders. (2) Further research on the use of cannabis-derived substances as medicine should be encouraged and facilitated by the federal government. The adverse effects of marijuana...must be simultaneously studied. (3) No medication approved by the FDA is smoked.

\*Position Statement on Marijuana as Medicine," Dec. 2013. www.psychiatry.org

This presentation was compiled by members of the Educational Outreach Committee of the Communities That Care (CTC) Southeast Pennsylvania Regional Initiative.

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