

Science AMA Series: I'm Dr. Kevin Hill, an addiction psychiatrist doing research on various drugs and recently released a book on the current state of marijuana.AMA!

DrKevinHill¹ and r/ScienceAMAs¹

¹Affiliation not available

April 17, 2023

Abstract

Hi reddit, thanks for visiting my AMA on marijuana today. I am currently doing research at McLean Hospital on marijuana as well as cigarettes. I thought reddit would be a good way to reach out to the community and answer any questions you may have regarding marijuana or addiction. I just recently released a book titled “Marijuana: The Unbiased Truth about the World’s Most Popular Weed” to dispel common myths people have on marijuana. With all the news lately regarding medical marijuana and legalization of marijuana, I think it is important for everyone to know the facts . I have a realistic view of the shift that is happening in this country and can answer any questions you have regarding the current state of marijuana laws in our country or marijuana itself. Some of my current studies involve new medications that have been used to treat marijuana addiction (yes reddit, it is addictive... not as much as other drugs, but that does not make it harmless). One of the medications we are currently using in a study is called Nabilone and chemically mimics the effects of THC. Feel free to ask me any questions about these new medications. Even though my focus recently has been more on marijuana, I have a lot of experience dealing with other addictions. I frequently visit news programs to discuss such things as the current opioid epidemic and how to treat opioid addiction. Check out my website: drkevinhill.com . There you can find more information about me as well as the research I am currently doing. If any of the studies sound like a good fit for you and you live in the Boston area, call the number on the website (617-855-2359) to participate. I will be back to answer your questions at 1 pm ET (10 am PT, 5 pm UTC), ask me anything! EDIT: Hey everyone. I am online and ready to tackle these questions over the next three hours. I am pumped by the number of questions you’ve already posted. Feel free to follow me on twitter @drkevinhill. To start, I just want to say that, while I have learned a lot about marijuana, mostly from my patients, I don’t have all of the answers. So if you have references to support statements that differ from mine, feel free to send them my way. UPDATE (3:20EST): Whew! I am wrapping up a few more questions, but thanks for joining us for a lively discussion. I will check back tomorrow to see if there are any pressing questions that people still want answers to. Otherwise, feel free to check out my website drkevinhill.com. I travel all over the country speaking on this important topic, so feel free to come say “hi” if I am in your area.

[REDDIT](#)

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DR_KEVIN_HILL [R/SCIENCE](#)

ABSTRACT

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CORRESPONDENCE:

DATE RECEIVED:
October 16, 2015

DOI:
10.15200/winn.144491.10196

ARCHIVED:

I am an instructor for my company's drug free work place. I hate promoting incorrect or propaganda type information to people I train. There are a few questions that were asked at our last training, and I would love to see if I could get some more information so that I can answer them correctly.

As far as carcinogenic properties as well as damage to the lungs, is there a known "one joint equals X cigarettes" ratio?

I was asked about a new marijuana drug test in the works that would be able to tell if someone

October 15, 2015

CITATION:
Dr_Kevin_Hill , r/Science ,
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psychiatrist doing research on
various drugs and recently
released a book on the current
state of marijuana.AMA!, *The
Winnower 2*:e144491.10196 ,
2015 , DOI:
[10.15200/winn.144491.10196](https://doi.org/10.15200/winn.144491.10196)

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has smoked marijuana in the last 8 hours. Is this correct, and if so, is it effective enough to be used in drug tests?

Are there known physical health risks associated with using marijuana exclusively through edibles or other not inhalant method?

Thanks.

[DalanTKE](#)

Great questions obviously.

There is no joint: cigarette ratio, in part due to the fact that joints may differ in potency and amount of marijuana. One key issue that this relates to is the carcinogenic harm from marijuana. While marijuana (mj from this point on) increases likelihood of respiratory infections like bronchitis, there are no long-term studies linking it to cancer at this point.

I am not aware of the drug test kit you refer to. Generally, marijuana will cause a positive urine test about 4 hours after use. People are also interested in the length of time mj can be detected. It depends on whether the user is a regular user or not, and also the cut-off, or sensitivity of the test. New users, single use, about 2-5 days at 50 ng/ml, the standard drug test. Chronic user-- longer because mj is stored in the fat.

The risks of marijuana are mostly associated with what's in the mj, not the form. So the risks associated with edibles are more due to the fact that the onset of action is longer and people unwittingly take higher doses than they intend to if they do not feel the effects quickly.

What are the rates of marijuana addiction you see, and what types of symptoms do you look for to diagnose it? And do you know the mechanism through which it occurs? Is it a physical addiction, a psychological addiction, or some combination of the two?

[kerovon](#)

Another great question. Just to repeat, most who use mj do not become addicted. Published data say that 9% of adults who use mj become addicted and 17% of young people (Anthony et al. 1994, Lopez-Quintero et al. 2011).

How to diagnose? Usually there are problems in work, school, or relationships. For a family member, teacher, or coach, you have to have a good sense of what is normal for a person and be able to tell if things are normal any longer. Have they stopped doing the things they normally do? Is their mood different? These types of things.

Marijuana can affect the brain like other addictive substances by causing surges in certain chemicals, like dopamine, in the brain. The release of these chemicals is pleasurable and reinforcing-- this makes it more likely that people will decide to use again.

Marijuana addiction is both psychological and physical. People who really like to use marijuana may overdo it to the detriment of other important areas of their lives. They may rely upon using as a key coping mechanism to deal with stress in their life.

It can be physically addictive as well-- if you are using daily, multiple times a day. The withdrawal symptoms-- anxiety, irritability, difficulty sleeping (Ryan Vandrey at Johns Hopkins and Alan Budney at Dartmouth have done some of this work)-- make it more likely that someone will continue to use.

Importantly, these withdrawal symptoms are not life-threatening. Alcohol withdrawal can cause seizures that can be fatal.

This is an opportunity to bring up the idea that there are different degrees of danger. Marijuana, on the

whole, is not as dangerous as alcohol, which is probably not as dangerous as opioids. However, this does not mean that marijuana is not potentially dangerous.

Based on your studies what are your opinions on recreational legalization here in the US? Also what is your experience with marijuana use?

[Blawn14](#)

Blawn, thanks for the first policy question-- I will answer these as well.

Legalizing recreational marijuana is complex question and excellent arguments can be made for and against legalization. Very briefly, arguments for legalized mj include 1) freedom of choice for adults 2) ability to raise tax revenue 3) decrease the number of mj-related arrests (does the punishment fit the crime?). Against legalization argument include 1) will there be increased use and therefore increased addiction? 2) will the alcohol and tobacco companies target certain groups and 3) driving safety.

My experience with marijuana is pretty typical, although I have not use in recent years. I am in favor of legalized recreational marijuana largely because I think adults should be allowed to do with their bodies and to their bodies what they choose, so long as it does not hurt others.

I want to emphasize, though, that in many states, like Massachusetts, that will have legalized mj on the ballot soon, the real question is no longer who is in favor and who is not, but rather, if it gets passed, what should the laws look like. More and more states will legalize marijuana, so we need to work hard to craft policy that gives people what they want while limiting risk.

Hi thanks for the AMA,

What are the negative effects that can be seen on the mind stemming from long term use? Has there been sufficient data collected in this regard?

[kravmagha95](#)

While we can have legitimate debates about the pros and cons of medical marijuana and legalized recreational mj, most agree that early, regular use of mj-- so young people below 25 whose brains are developing-- is a bad idea.

Major negative effects of long-term use include cognitive difficulties, worsening anxiety, worsening depression, and increased likelihood of expressing a psychotic disorder (not causing one).

Madeleine Meier from Duke published an important study in 2012 in a major journal that followed over 1000 New Zealanders over time. They did neuropsychological testing at ages 13 and 38 and found that early regular use of MJ was associated with up to an 8-point loss of IQ, and that is very significant. I should point out that this study was controversial and some questioned the results. Overall, I think it was a well-done study that supports other similar work on cognitive function. But we need more long-term studies, and the NIH is planning these studies as we chat today on reddit.

I have heard a lot of discussion about how marijuanas medical benefits are generally overhyped. From what I have been able to find, there is really only decent clinical evidence for its efficacy for chronic neuropathic pain, appetite stimulation (for patients with AIDS, or undergoing chemo), and as a nausea suppressant. I haven't been able to find any good clinical evidence for its effectiveness in inflammatory bowel disease, epilepsy (though there seems to be some decent trials starting here), or for treating cancer.

What are the areas that you think there may be actual medical uses of marijuana (or marijuana derived drugs)? Are there areas that you think it will turn out to not have any real benefits? Additionally, do you think there will end up being any real medical use of the marijuana plant,

or do you think benefits will mostly only come from drugs derived or purified from marijuana (like cannabidiol).

[kerovon](#)

Excellent question, kerovon. I tackle these question in my book and my recent article in JAMA.

The two commercially-available cannabinoids are FDA-approved for 1) nausea and 2) appetite stimulation. Beyond that, I think there is strong evidence supporting the use of mj or cannabinoids for chronic pain, neuropathic pain, and spasticity associated with multiple sclerosis.

For other conditions, there is little or no evidence, but that is changing every day. For example, early clinical trials of cannabidiol (one of the cannabinoids) for epilepsy are very positive. We need to do more studies of marijuana and cannabinoids as treatments for various medical problems.

Given the limited number of cannabinoids that are FDA-approved, it does make sense to use medical marijuana in some clinical situations. Not as a first-line treatment, but if a patient and a doctor try multiple treatments without success, a discussion of medical marijuana is reasonable in some cases.

Hi Dr. Hill,

I believe the majority of Hispanic youth admitted to treatment for marijuana addiction are placed in non-intensive outpatient. Many of these youth report not using in the past 30 days prior to admission (TEDS-A, 2013). If they can abstain for 30 days, would you say they need treatment?

Also, there are a few who are admitted to detox facilities for marijuana. Can you touch on the rationale for marijuana detox admission?

Thanks for your answer ahead of time.

[shadowwork](#)

Thanks for the first question about marijuana addiction. Importantly, I should point out that most people who use marijuana don't become addicted. Published data puts these percentages at 9% of adults and 17% of young people who use become addicted. Because 20 million Americans used mj last year, there are quite a few people who are addicted to mj-- a small fraction of a large number can be a large number.

Most people with addiction are sent to outpatient treatment, and that is true of mj addiction as well. That is mostly for two reasons 1) it is cheaper than residential treatment and 2) there is no scientific evidence that residential is better than outpatient treatment. 30 days free from mj, and thus a negative drug test hopefully, is a good sign, but treatment may still be necessary.

While there is a physical withdrawal associated with stopping marijuana use if the user is using daily, multiple times a day, these withdrawal symptoms are not life-threatening. As a result, inpatient detox is not necessary.

CBD oil has been getting a lot of hype in the media lately. It is often touted as a marijuana alternative that offers similar medical effects but with very little to none of the stimulant effects of THC. I was wonder what your take on CBD oils is? Is it over-hyped or is there real potential for further research?

[laziefred](#)

The marijuana plant is made up of over 60 cannabinoids. Most of us are familiar with only one or two of them-- THC and CBD. CBD generally buffers the effects of THC. CBD is not psychoactive and it seems to have anti-anxiety and anti-psychotic properties. I am very excited about its potential.

As mentioned above, researchers are looking at CBD as a treatment for a variety of conditions like epilepsy, and the excitement is justified.

Hey Dr. Hill. Thanks for doing this AMA.

Have you done any studies regarding the differences between Cannabis and Cannabis extracts?

A lot of people push the extracts as a cleaner and safer method of ingestion especially for medical patients. I tend to stand by that as you are eliminating plant matter, severely reducing how often you have to inhale and most users (medical and recreational) vape their oil. Do you believe this to be true?

With extracts(oil, wax, dabs) being at a much much higher concentration, do you believe that it can be more addictive (or more easily addictive)?

We all know about the entourage affect but have you been experimenting with different levels and combinations of terpenes? As these have medical affect in themselves it could be a great way to sort of "tune" the medication to each individual patient.

I left a comment on another post about my personal experience coming off of an almost 6-7 year daily regimen. The biggest problems I had quitting were lack of sleep and absolutely no appetite. My heart rate has also been much higher through the entire experience. Are these affects common?

Thanks a lot for your time and as you can see I'm definitely very interested in this topic. Sorry for the wall of text!

DabaDay

Another great question. We definitely need to do more research on extracts now that more and more people are using them. Are they more addictive? I don't think we know yet. I will say that I have seen many problems associated with butane hash oil or similar (granted, I am seeing a subset of users). If someone is going to have an adverse effect from using (paranoia or vomiting, for example), it seems like these effects are more likely to occur with extracts and their higher THC content.

The key with various forms of cannabis is the THC content (or content of other cannabinoids). For medical marijuana, it is certainly better to use formulations that are not smoked.

Stopping regular mj use is hard to do. When people try to stop, difficulty sleeping and lack of appetite are common side effects. There are things that you can do to counteract these side effects though.

Why does cannabis sometimes cause paranoia, dread, and anxiety in certain people? What physical parts of the brain are more closely associated with those symptoms?

For me, it's VERY uncomfortable any time I have had cannabis in my system, unless it has <1% THC. I have tried many strains over the years, but almost all of them were not fun at all, so now I avoid it completely. As much as I love the plant and work diligently in the cannabis field (politically and with Hemp CBD), I just don't like consuming it!

Thanks again for participating in this AMA!

PsychonaticInstitute

That's a tough question-- it is hard to link certain symptoms to certain parts of the brain. There are two major types of cannabinoid receptors, CB1 and CB2, and CB1 receptors are located primarily in the brain. The effects that result from activation of those receptors vary in part due to the dose of THC, as

you mentioned. Similarly, some people are more likely to experience negative effects from mj than others.

Thank you for doing the AMA.

It's said that no one has died from Marijuana use and that it's not possible to die from Marijuana use. It's my understanding that these statistics are tabulating direct death by overdose. What about indirect deaths such as Marijuana causing a spike in blood pressure or something of that nature? Are there any documented indirect deaths from Marijuana? And if not, what do you think is the likelihood that they happen but are not recorded as being caused by Marijuana?

[apt2014](#)

These are important questions.

True, people mean fatal overdoses when they talk about overdoses, and there are no fatal mj overdoses that I am aware of.

Yes, deaths may result indirectly from marijuana use-- someone may use poor judgment or get in a car accident in part due to their use. The increase in blood pressure or heart rate resulting from mj use should not be fatal.

These indirect deaths would be hard to measure, though. Just because someone has THC in their system does not mean that THC causes an event to occur.

Dr. Hill, thank you for taking the time to do this AMA.

A few questions:

- 1. What is the most dangerous misconception about marijuana in your opinion?**
- 2. What's your opinion on the "marijuana replacement" approach several of my friends are using as a way to treat their more serious addictions. As a recovering heroin addict i know several people that think replacing one addiction with a "safer" alternative. How can I explain to them that's not a safe or maintainable alternative?**
- 3. How would someone interested get into the field you work in? Neuropsych with a neuroscience focus is my desired career path. Any and all advice would be greatly appreciated!**

[tigersfan529](#)

Thank you for participating, tigers fan.

The most dangerous myth: "Marijuana is harmless." It's not harmless. It is not as dangerous as opioids, for example, but while mj may not be as bad as opioids, it still can be dangerous.

I don't recommend using mj to treat other addictions, but medical marijuana may be a better choice than opioids for chronic pain though. Using one addictive substance to treat addiction to another, especially when there are effective methods for treating the other addiction, is not a great idea.

Addiction affects us all. Many people in my family have battled addiction-- that's how I got into it. Being an addiction psychiatrist means medical school first, then psychiatry training, then addiction training. I love what I do, but I don't look at it as "work". It is my mission.

What is its efficacy (if any exists) in treating depression?

[kekort2](#)

There is no scientific evidence that I am aware of that supports the use of marijuana or cannabinoids to treat depression. There are studies that link marijuana to worsening depression, in fact (Degenhardt et al 2003).

what is conclusively known about marijuana's long term and short term effects on long term and short term memory? and how do you feel about the phrase "marijuana", which is rooted in semi-racist propaganda, being used much more frequently than any more scientifically appropriate nomenclature?

also, thank you for being you! the work you're doing is important and i appreciate it. :) thank you!

[adelaide129](#)

Reddit is great. More excellent points and questions.

I use the term marijuana because that is how it is most commonly known in the United States. The origin of the term is dubious, though, so I will give more thought to just using "cannabis."

MJ adversely affects both short-term and long-term memory, but the short-term evidence is stronger. Nora Volkow, the head of NIDA, published a nice review of the adverse effects of mj in the New England Journal of Medicine last year which covers the specifics.

As an addiction specialist, what specific addiction do you see as the most detrimental on our society and why?

[widespreadhammock](#)

Wow, that is a tough one. By the numbers, nicotine addiction and alcohol addiction affect the most people.

The opioid epidemic has rightfully received a lot of attention lately and people are dying from heroin every day. Opioid addiction is probably the toughest addiction to treat.

What effects does it have on the developing brain (as opposed to the mature brain)?

[UtMed](#)

The negative effects of marijuana are more pronounced on the developing brain for sure, and our brains develop until about age 25. Please see my replies above for a brief discussion of the cognitive effects of early and regular use.

While we know that bad things happen when young people use regularly-- daily or nearly every day-- we know much less about less frequent use.

What would you say is the best method to stop or decrease the use of marijuana. Both me and my wife are thinking about stopping, but it's sort of become part of our daily routine. I Smoke 3-4 times a week(she smokes once every day) and although I don't think it's taking over our lives I'd certainly prefer to do it only once every other weekend. It's just a habit that has no real benefit for us now.

[Jorke550](#)

Congrats on looking at your life and deciding to try to make it better. Your situation is pretty typical and I would encourage you to talk to your doctor or someone who treats addiction (I am not saying that you are addicted) about it. Most likely you would talk to someone on a weekly basis for awhile about your

use in order to reduce or stop. This would address the reasons why you are using, why you want to stop etc. It ultimately becomes a risk-benefit discussion. An evaluate like this may also uncover other issues that can be addressed to improve your life as well.

If you send me a message through my website drkevinhill.com, we can try to help you find someone in your area. Good luck.

Do you think that marijuana's link to schizophrenia is due to the fact that a high amount of marijuana users are also tobacco smokers?

Do you subscribe to the dopamine hypothesis of psychosis?

If so do you think that it could be a potential reason for why marijuana is attributed to causing it in those with a predisposition for psychosis?

Thank you for taking the time to do this AMA, more accurate information is definitely a necessity.

Edit: Spelling

[space_wolf](#)

As always, if people have references that run contrary to my views, send them to me.

MJ does not cause psychotic disorders like schizophrenia. Let's be clear about that-- there is not definitive evidence of a causal link. MJ use is associated with increased likelihood of expressing psychotic disorders. If you have a family history of schizophrenia, and you start using MJ regularly at 14 or 15, for example, you are 5X more likely to express your genes for a psychotic disorder (Di Forti et al 2015 Lancet Psychiatry).

Hey Doc,

I am currently an every day user of recreational marijuana and an ex cigarette smoker. I haven't smoked a cigarette in almost 2 years and I tried quitting several times before quitting for good. I found it very difficult to quit smoking after 10 years of smoking about a pack a day. However I have also smoked marijuana everyday for the past 10 or so years. I hold a steady job and do well for myself. I have had to quit smoking marijuana for drug tests, etc. and I have found it far easier to just quit with no real ill side effects/addictive tendencies compared to cigarettes. Even though I smoke pot everyday, I don't see myself as an addict. I am able to function effectively in my everyday life and I can go a day or two without smoking without actually having an urge to smoke marijuana. On the contrary, I have old friends who smoke daily and don't seem to function in the same way that I do. They are lazy, unmotivated and can't seem to get their lives together. All they really care about is their week to week paycheck, smoking pot and doing nothing. This seems to me as more of an addictive personality.

Can you explain why my friends and I are so different and the science behind an addictive personalities?

Thanks!

[armandmedeiros88](#)

Some users become addicted, but most do not. It depends on lots of factors-- genetics, current stressors, other medical or psychiatric issues you may have. Addiction is a chronic medical illness like asthma, diabetes, and high blood pressure.

Congrats on quitting cigarettes.

Hello there Dr.Hill, hope you answer this question as it really affects a discussion I might have sooner or later.

Is the process to beat the addiction harder for those who have used heavily for over 6 years since the age of 16? Are there any health effects that could cause irreversible damage? Is it possible for someone to better off feeding their addiction?

Actuw

Heavy use is hard to stop, no matter what the person's age is. We have talked a lot today about the effects of chronic use on the developing brain and how mj may prevent full development.

If someone is truly addicted-- we have discussed how most who use mj are not-- then they should get help. Feeding the addiction will only make things worse.

Two questions: What do you think is the best definition of addiction?

Dr.Carl Hart has been a controversial figure in your field. Any opinion on his work on drug addiction?

Neuro_Bing

Addiction: "repeated use despite harm."

Dr. Hart is an outstanding researcher with an excellent reputation. Check out his book "High Price." I don't agree with all of his ideas, but he is a leader in the field for sure.

There have been several meetings discussing the dangers of cannabis in my home town lately. I have been following these discussions and I'm translating what the county medical professional has been presenting as evidence that we should not legalize cannabis in Norway. Do you have any comments on the following statements?

- Cannabis has gotten much stronger in recent years. Modern cannabis shouldn't even be regarded as the same drug.
- The concentration of compounds that can evoke serious mental illness has increased, and the compounds that protect against mental illness have decreased. Newer studies indicate that smoking cannabis doubles ones risk of mental illness.
- It seems that the risk of becoming physically dependent on cannabis is increasing as the products are getting more potent. Cannabis and tobacco in combination seems to increase the addiction potential.
- Adolescents who smoke (a lot) of cannabis during puberty score, on average, 8 points lower than non-smokers on IQ tests at the age of 35. This does not seem to improve when the person stops smoking after a few years.
- In Norway and Denmark, nearly half of all high school dropouts are cannabis smokers. The ones who don't finish high school have increased occurrences of health issues and often have trouble getting a normal job.
- The risk of getting in a car accident increases seven-fold when a person has smoked a lot of cannabis. (I don't know what "a lot" means here).
- Lungs are much more damaged by the combination of cannabis and tobacco than tobacco on its own. We've seen patients aged 40-50 who have developed Chronic Obstructive Pulmonary Disease (COPD)

deadtime

I cover all of these in my book, but I will briefly try to address these.

Potency has increased dramatically. Avg THC content in 60s, 70s, 80s was 3-4%, latest published data puts potency at 13%. However, we know that you can buy the plant with THC content in the 20s and

low 30s.

THC and CBD compete for precursors at the plant level-- so increasing THC decreased CBD more or less. Engineering mj for high THC content does increase the likelihood of THC-associated side effects like paranoia.

I described the Meier study and the potential 8-point IQ loss earlier.

MJ use doubles risk of car accidents according to published data, but I have not seen research saying 7-fold.

Smoking is a harsh respiratory process. If someones using mj and tobacco is smoking more often than they would if they used tobacco alone, it stands to reason they would have more respiratory consequences.

Thanks for taking the time to do an AMA! I'm curious about marijuana's effects on different age groups. For example, is it more addictive when users begin earlier? What kinds of effects can it have on the developing brain, and why? What age do you believe is the minimum safe age to consume the substance? Finally, does marijuana affect older users (50+) differently than users in their 20s or 30s?

Again, thank you very much. I'm hoping to hear from you.

[Br3k](#)

Great questions.

In general, early initiation of an addictive substance increases the chances of addiction.

The effects upon the developing brain are covered in earlier responses.

I don't recommend that young people use marijuana, but risk depends on factors like age of the user and frequency of use.

Yes, mj affects people of different ages differently. The developing brain is especially vulnerable.

How do you feel about the use of marijuana during pregnancy?

[Salehna](#)

It would be difficult to do these studies for ethical reasons, but I think most agree that exposing the fetus to marijuana is a bad thing. There is some animal research showing that prenatal exposure to THC affects brain development.

You probably won't answer this but, if a marijuana addict stops smoking at age 20 will this aid the last 5 years of brain development or has the damage already stopped any further development?

[ConnorClarkeNoFap](#)

Connor

If someone is addicted, it is never too late to stop.

How exactly does the addiction work, is it due to dopamine? I was wondering this due to past idiots both online and irl arguing with me over it.

[Fads68](#)

Addictive processes (drug-taking, food in some cases, etc) cause release of certain chemicals in the nucleus accumbens of the brain. Dopamine is one of these chemicals. Cocaine, marijuana, and cheesecake are all things that may cause surges in dopamine.

I've been reading a lot about the benefits of nicotine by itself outside of tobacco products. I've also read that it's actually not very addictive when it's not combined with the chemicals in tobacco. What's your opinion?

[OhDannyBoy00](#)

I work with lots of athletes who dip, so I can tell you for sure that nicotine is very, very addictive whether or not it is smoked. And very hard to quit, as well.

If there are any young baseball players out there-- don't start dipping!

Is it true that when smoking marijuana, more tar is going into the lungs than when smoking a cigarette? What are the best alternative ways to take marijuana?

[Auburn530](#)

Smoking is a harsh process.

Vaporizing or oral consumption are better for the lungs than smoking.

How are long term research studies keeping pace with how Marijuana itself is evolving? It seems that over the last decade there have been much more potent strains entering the market. Edibles, topical products, ect are much more widely available and differs from simply smoking it.

[bmanny](#)

We are not keeping pace as well as I would like to. The landscape is changing, no question. This is why it is critical for NIH and similar organizations to be funded.

Dr. Hill, thank you for the AMA.

One of the phrases I have heard thrown around in reference to MJ is "gateway drug," which I understand means a drug that leads to the use of another "harder" drug, though I don't know how that works, exactly.

Do you have an opinion as to whether or not MJ is, in fact, a gateway drug, and if so, what about MJ makes a user move from MJ to cocaine, a substance with wildly different effects on the user?

[torpedo209](#)

Ah, the gateway question.

In the US, when people say "gateway", they imply a causal relationship. If you use mj, you will automatically move on to become addicted to other drugs later.

I don't think of it that way. People who have addiction problems at 25 or 45 often describe initial use of mj or alcohol or nicotine at an early age. I think, then, that early use of any of these substances increases the likelihood of future addiction. Thus, any use among young people should be taken seriously. But I don't think that early marijuana use means that a child is doomed.

Are physical withdrawal effects (like sweating) caused psychologically?

[ItCanAlwaysGetWorse](#)

No. Cannabinoid receptors are located all over the body and withdrawal symptoms stem from these receptors.

Thanks for doing this AMA! I was curious if you could talk a bit about the history/evolution of the plant itself, both with respect to it's ethnobotanical use and the more recent rigorous efforts by growers to breed more potent, and more varied, psychoactive lines.

[Izawwlgood](#)

Great question-- I have a chapter on the history of cannabis in my book.

In short, growers are able to target cannabinoids in their crops-- typically THC and CBD. Many grow high-THC plants, so grow high-CBD plants-- it depends on what effects they are hoping for.

I'm all for legalizing marijuana use by responsible adults, however in the hands of teens and young adults I am concerned about its possible detrimental effects on things like body and brain development. More research needs to be done on the topic but until then it leaves a bit of a grey area on setting proper age restrictions.

I have two questions:

- 1. Are teens and young adults under the age of 25 more/less/similarly susceptible to marijuana addiction when compared to older age groups?**
- 2. Based on your answer for 1, what age do you think would be reasonable to set as a minimum for the legal consumption of marijuana?**

[Exnihilation](#)

1) Yes. 2) While one's brain may develop until 25, I think 21 is a reasonable minimum age.

How can you consider yourself unbiased when you make your living by promoting the idea that marijuana is addictive which is clearly not consensus science at this point?

How is a drug (Nabilone) that "mimics the effects of THC" better than THC itself? Aren't you just shilling for the pharma companies here?

Wouldn't you agree that the current situation of illegality adds layers of detrimental effects to any drug use? How do you separate the inherent 'dangers' of the drug from the dangers that are created by forcing drug use into an underground situation?

Where do you stand on the Colorado and Washington experiments?

From your website:

The average content in marijuana of the component that produces a high, tetrahydrocannabinol (THC), has increased from around 1-2% in the 60s, 70s, and 80s to at least 13% now. So the comparison between marijuana exposure years ago versus today may not be a valid one. As a result, any marijuana use by a young person needs to be addressed immediately and appropriately.

The cost of weed has also skyrocketed. Have you considered the possibility that people simply don't smoke as much as they did in the 60s, 70s and 80s? Have you considered that many of the so-called 'appropriate' interventions cause more damage than the moderate marijuana use you admit (on the same page of your website) is the norm?

[psychoalchemist](#)

MJ is addictive for a subset of people. Most don't become addicted. Those are the facts, and I am open about them.

One potential advantage to nabilone is that it is not cross-reactive in the urine. So if someone using nabilone stops using mj, their urine will be negative for THC. We don't know all of the answers, but we are trying to get them. For the record, I receive medications and placebo only for some of my studies. No other support.

I favor legalization of mj, but I can see why you might have jumped to the conclusion you did.

Hello Dr.Hill,

Friends of mine who support marijuana are quick to say that marijuana has no real impact on the brain, that it is a harmless plant. My question is, does marijuana use effect cognitive development during teenage years? If it does, if one were to quit after becoming an adult, will the effects of the prolonged use reverse..?

Thanks in advance.

[unaware](#)

We answered this one a few times. Early, regular use of mj affects brain development for sure. Whether recovery occurs after cessation is not clear.

Dr. Hill - first let me say I really respect what you're doing and appreciate your commitment to treatment of addiction. We need more people like you in the world.

My question is -- what are your thoughts on suboxone coupled with weekly therapy as a treatment for opiate addiction? Also -- what do you recommend as the best way to come off / ween yourself off of suboxone when the time comes to get off (with the assistance of a doctor of course)? I know there are multiple approaches, but what do you think works best?

Really looking forward to hearing your thoughts, thank you!

[jqkelley](#)

Buprenorphine plus weekly therapy can work, check out Roger Weiss' 2011 paper in the Archives of General Psychiatry.

Bup needs to be tapered slowly and carefully under the supervision of your doctor. It can definitely be done. I like to see people weekly or close to it when the dose is in the 1-2mg range.

What do you think about the criminals keeping it schedule 1? Should they be fired or frankly put in prison for ignoring the science?

[Dosage Of Reality](#)

I don't think mj should be schedule 1. Schedule 1 means 1) addictive-- yes it is addictive for some people and 2) no medical value. I don't think you can say at this point that mj does not have medical value. It is not a first-line treatment, but, if necessary or if other treatments have failed, it can treat some conditions effectively.

Hello Dr. Hill. I'm very much looking forward to reading your answers in this post. Also i just went on Amazon and ordered your book.

I have a question, that involves a bit of counterfactual thinking:

How do you think the image of marijuana would look today if Harry Anslinger hadn't run his propagandistic campaign against it in the 30's?

[mAtteT](#)

Thanks for buying my book. Please review it if you get a chance.

We would be much further along (at least with regard to research) if Anslinger was not a part of the story.

Out of the adult patients you see for marijuana addiction, what fraction are self admitted? How does this compare to alcohol? Can you compare and contrast the addictions?,

[trenchdigger](#)

Only about 6% of those seeking treatment for addictions say that mj addiction is their main problem.

Would you say that Marijuana is more or less addictive than alcohol and should this affect whether or not it should be legalized?

[Maughlin](#)

Less.

What does the research suggest in terms of treatment of chronic migraines using MJ? Can it be used and is it an effective treatment?

[ip_address_freely](#)

I have not seen research suggesting the use of mj for migraines. I have talked with patients who feel that it is helpful, though. If you have seen some research, send it my way. Thanks.

How far are we from developing a pharmaceutical equivalent to mj that doesn't cause the associated intoxicating effects? What legal problems stand in the way of R&D?

It seems crazy to me that we don't have a "pot pill" for chronic pain. We don't smoke opium to get the benefit of morphine.

[Then I got rabies](#)

It seems likely that a pretty close approximation to mj (THC and CBD in a 1:1 ratio essential) will be approved in the next few years.

Dronabinol and nabilone are the 2 available cannabinoids in the US.

No answer in two hours...

Dr Hill must be caught up in his.. ahem.. research

[OhNoRhino](#)

Ha! I actually was doing research until 12EST. We are busy conducting trials for those who are addicted, check them out at drkevinhill.com.

My relationship with my family is the best it's ever been, I just got a promotion at work, I have straight A's at school, and I work out everyday. If I vaporize marijuana multiple times a day, but my life is very well put together, would I still be considered an addict?

[glarsen](#)

No.

I would hope, though, that no one in your life has expressed concern about your use. If they did, then I would recommend an evaluation.

Addictive in what way? I've been smoking cannabis for about 20 years now, not 24/7 and when i stop thats it. If anything i feel better for the brake. I think that people who say that they NEED it have a problem with life not with drugs. NEEDit to chill out or go to sleep, just sounds like life is getting harder. If these people can go on holiday, let's say somewhere tropical with new food and things to look at, do they still need weed to sleep/chill or are they ok now?

[mrcypher305](#)

It sounds like your experience is similar to most people's. Most users don't become addicted. But we do need to recognize that mj can be addictive for some people.

If only 9% of users become addicted, then does that bring into question whether mj is really addictive or if some other confounding factor is at play? E.g. the 9% might become "addicted" to anything that provides some relief for <whatever they're going through>?

How do you distinguish?

[ent_saint](#)

I don't think so. However you define addiction, marijuana would seem to meet the criteria-- for some people.

Again, most who use mj, like most who drink alcohol, don't develop addiction.

What are your thoughts on ibogaine?

[noyogapants](#)

A drug with significant potential side effects. Studied for cocaine addiction I think. I am not aware of it being studied for mj addiction.

Have you studied the addiction with the computer or Internet?

[MechanicalSmencil](#)

I have not. Computer use can be problematic for sure.

Hello and thanks for the AMA! I am a psychiatric nursing student looking forward to receiving my masters soon. I've heard so much about medical marijuana for pain and other chronic conditions, but it's hard to know what to believe. I'm specifically interested in its use as a psychiatric drug, in which there is not a ton of viable research. Do you ever expect that mental health providers will prescribe medical marijuana for mental health conditions? Or do you think marijuana is more detrimental than helpful when treating mood and/or anxiety disorders? There's lots of anecdotal evidence on both sides - any empirical evidence that you know of?

[MiceAreTooNice](#)

Good luck getting your Masters.

I am wary of medical mj for mental health conditions-- there is little or no data. Ultimately, though, specific cannabinoids may prove useful in this regard.

Hello Doctor and thank you for doing this AMA. I have had a long-standing theory that part of the reason that marijuana hasn't been legalized is because there is no good way to tell if someone smoked (or ingested) it minutes, hours, or days ago. Meaning, law enforcement wouldn't be able to tell if one was under the actual influence while driving.

My question: Is there a "breathalyzer" for marijuana?

Follow up: Do you think having something like a breathalyzer would help or hinder legalization?

[Iron man wannabe](#)

Important question.

I agree that we cannot test for mj impairment like we can for alcohol impairment. There is no breathalyzer that is commercially available, but people are working on it.

I would feel much better about legalization if a breathalyzer existed and it was shown to be effective.

As a doctor, would you recommend someone use cannabis over opiates for pain? Opiates and reliance of them for pain relief frightens me because I had a heroin abusing uncle and father in law and have been around addicts all my life which is why I sought an alternative.

I'm not asking if it is safe or not, just if it is maybe 'better' than some alternatives. I'm prescribed Hydrocodone but it makes me nauseous where the cannabis makes me just as unable to drive as the Vicodin.

I also was a pharmacy tech for 10 years and have seen what opiates can do.

[xetelian](#)

Possibly.

The best thing to do is to have a conversation with your doctor-- one who knows you well-- about how to treat your pain.

Most doctors do not recommend high-dose opioids for chronic pain.

Hello, thank you for joining us out here.

Is a pharmaceutical drug really necessary to treat marijuana withdrawal. I find that my withdrawal symptoms usually dissipate after a couple days of cessation.

[bryguy09](#)

Bryguy

A drug is not necessary, but it may help. Many cannot stand the withdrawal symptoms in the first few days and then they use again. We are trying to help them quit and stay quit.

Sounds like you have tried a few times to quit.

If smoking 1-2 times a day for over 20 years, if quitting cold turkey, how long until your system is cleared?

[ghostcarver101](#)

Your urine should be free of THC in 20-30 days.

How do you define addiction? I'll have sprees where I use for several months, several times a day, then decide it is time for a break and be away from it for several months. I'm in perfect physical condition, I'm steadily working towards and achieving my life goals, so...am I addicted? I'd say no because I'm 100% living the life I want to live, but I have had criticism for this view. What do you think?

[Neuromancer311](#)

Who is criticizing you? If someone you care about expressed concern about your use, it is worth talking to a professional about it.