

National Families in Action Podcast Series
WHAT DO I NEED TO KNOW ABOUT MARIJUANA?

Dr. Wilson Compton: Part 8 – If Marijuana is Medicine, How Can It Hurt Me? (September 3, 2019)

EPISODE SUMMARY

Wilson Compton, MD, is deputy director of the National Institute on Drug Abuse, an agency of the National Institutes of Health. NIDA supports most of the world's research on the health aspects of drug abuse and addiction. Dr. Compton works with the director to provide scientific leadership of NIDA's research portfolio.

Key Points

- Difference between whole marijuana plant and chemicals in the plant
- "Legal" is not the same as "safe"
- Marijuana toxicities
- Do states that legalize marijuana protect consumers from unsafe, ineffective drugs?
- CBD is a mostly unregulated industry

EPISODE TRANSCRIPTION

Sue Rusche (President and CEO of the National Families in Action): Welcome to National Families and Actions Podcast series titled What Do I Need to Know About Marijuana?

Today we are going to cover several topics. Our guest is Wilson M Compton, M.D., deputy director of the National Institute on Drug Abuse, or NIDA, one of the National Institutes of Health, Nida supports most of the world's research on the health aspects of drug abuse and addiction.

Dr. Compton works with the director to provide scientific leadership of NIDA's research portfolio. He's an expert on effective prevention and treatment services. Dr. Compton, welcome.

Dr. Wilson Compton: Well, thank you. It's really a pleasure to be with you today.

Rusche: We are delighted to have you here. So let's get started. If marijuana is medicine, how can it hurt me?

Compton: Well, that's a really terrific question, but I think we need to take that question apart and look at sort of two components. First off, is marijuana a medication? Is it a medicine? Then we can talk about whether and how it might hurt somebody. So the first part has an assumption that marijuana has been proven to have medical uses.

But data are really quite inconclusive about that. The marijuana plant has not been approved by the U.S. Food and Drug Administration for any health condition. On the other hand, FDA has approved some of the compounds in the marijuana plant. So that means some of the chemicals within the plant itself can be used as medications, even though the plant, as in entirety, has not been approved by the FDA.

I think that's really an important distinction, whether it's the whole plant or the chemicals within it. Most therapeutic research doesn't use the whole plant, but it's focused on the cannabinoid chemicals within the plant. So like THC, which is the main psychoactive component of marijuana or other chemicals like cannabidiol, that has gotten a lot of attention recently.

That's often called CBD and that's not a psychoactive component, but may have useful medical purposes. Now, why isn't the plant a medication? What makes it a less than ideal candidate to be a medicine? Well, it's not purified, so it contains numerous different chemicals with multiple and often unknown health effects. The variability of these compounds and components make it really difficult to produce a consistent dose.

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Compton: It's consumed often by smoking, which really doesn't sound like a good way to take a medication. We really don't want your lungs damaged or impacted when you're taking a medicine. And indeed, ultimately, there's sort of brain effects and impairments that are associated with marijuana use that would limit its use as a medication as well. All right. So that kind of leads me to the second half of the question, which is, can it hurt you?

Can marijuana hurt you? So indeed, if you were to consider using it as a medication, what are the potential downside? Now, I think it's important to keep in mind that the truth is there are lots of medications that have side effects. In fact, I would suggest that all medications have some degree of side effects or complications, even those that we don't think of having any problem, for instance, acetaminophen.

We take that every day for headaches or fever. Well, acetaminophen, it turns out, can poison a large number of people. And many people die of acetaminophen overdoses in our country every year. So even medications that we take for granted are safe and effective can have side effects. So the idea that even if marijuana were a medication, it would be harmless couldn't possibly be true.

So let's decide whether something is a medicine. Is a patient likely to derive benefit to get help from this substance? And do the benefits outweigh the possible risks? Now, we certainly know that marijuana can lead to habit forming compulsive use and addiction and that it can impair the ability to think clearly. These and other risks must be carefully evaluated to make sure that we're not exposing patients to risks that outweigh any potential medical benefit from this complex plant.

Rusche: Well, but if a state legalizes marijuana, it must be safe to use. Isn't that correct?

Compton: Well, of course, that's an important question that many people are thinking about. But whether something is sanctioned criminally or illegal is quite separate from whether it's safe to use. Also, I think it's important to point out that safe is not an absolute term. For instance, when we think about driving too fast, we know that driving a little bit too fast is dangerous.

Driving twice as fast as that is even more dangerous. So both of those may be dangerous behaviors, but they're different in terms of their degree. So just because a state has legalized a product for consumption doesn't mean that it is without any risk. Medicines that are safe for adults also may not be safe for children, for example, just thinking about other intoxicating substances.

Alcohol is legal for those over age 21 throughout the United States, but is associated with many, many harms. Alcohol causes physical health problems, multiple social impairments. And so that's one example of something that's legal, at least for those who are over age 21. That's associated with many harms. Tobacco, of course, is another key example. It's legal for adults over the age of 18 or in some states over 21, but kills something like almost 500,000 Americans every year.

So these are just a couple of examples of how a product can be legal but not necessarily safe.

Rusche: Hmm. Well, can you tell us what some of the harms of marijuana are.

Compton: When we think about the potential harms associated with marijuana use? We need to be focused on both the acute harms, what can happen while somebody first uses it. So sort of during the acute intoxication or when they've just used it recently as well as some of the longer harms that can take place when somebody used chronically or over the long haul.

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Compton: And those are somewhat different, certainly from the acute effects we see that people feel a sense of intoxication are high. That's often what they're looking for. But that can become quite extreme, particularly with the dosages and the potency of marijuana that's seen in so many parts of the country. It can cause changes in mood, difficulty with motor coordination.

That's a fancy way of saying that someone can become clumsy or uncoordinated, and so they may be quite at risk for operating heavy machinery like cars or other equipment. They have difficulty with their memory and thinking. In some cases, they may experience hallucinations or delusions. That means that they may see or hear things that aren't really there, or they may have fixed false beliefs, things like becoming paranoid and suspicious, really, not just a little nervous, but also having fully false beliefs about someone ganging up on them or trying to harm them.

These are some of the extreme side effects from acute use of marijuana in some people. Marijuana can indirectly lead to risky behavior like accidents or bad decisions. So in that case, it certainly can be lethal in terms of causing car accidents that can be fatal. When we think about some of the health effects, we think both about the immediate effects, like sometimes breathing problems or an exacerbation of asthma.

We talk about increased heart rates. There also may be longer term consequences of use of marijuana. For instance. There are concerns about the impacts on child development when children have been exposed prenatally or during pregnancy to use of marijuana. There can be intense nausea and vomiting called hyperemesis. When somebody uses marijuana chronically and heavily, they develop this really painful sensation of cramping in the stomach, along with uncontrollable vomiting that is completely due to heavy use of marijuana.

It will go away if people cut down and or quit their use of marijuana, but can be quite difficult to treat otherwise. Mental illnesses may be associated with long term and particularly heavy use of marijuana starting early in life. Brain development can be impaired. Marijuana can certainly impair short term use of a short term memory and thinking, but long term it may impair the ability to remember things and affect how the brain builds connections between different areas of the brain that are necessary for these essential functions.

I also would point out that addiction is a complication of use of marijuana. People don't expect that. But marijuana can be habit forming and addictive just like the other intoxicating substances.

Rusche: Wow. That's a long list.

Compton: I agree. There's really it surprises many people to remember and think about all the potential consequences and health effects of use of marijuana.

Rusche: Particularly when there is a series of different and contradictory messages coming from the marijuana industry in much the same way the tobacco industry didn't want us to know about the harmful effects of smoking. So next question. My state legalized marijuana for medical use several years ago. I assume it's regulating the marijuana industry to protect consumers from unsafe, ineffective drugs. Is that a safe assumption?

Compton: That is completely an unsafe assumption. States vary considerably in the regulatory systems. They have to manage marijuana. Now, this is true both in those states that have legalized marijuana for health purposes. States have legalized it in many locations for a variety of what of uses that people might avail themselves of for various health conditions. It's also been legalized in a number of states for broader recreational use by adults.

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Compton: And in both of those cases, the regulatory systems. In other words, do states determine whether there are contaminants in marijuana? Do they determine the potency and the chemical composition? Do they ascertain how carefully it's grown and whether there harms to the environment because of marijuana agriculture? States vary considerably in whether they do this at all or in how carefully they do this.

So it's important to get to know what your particular state is doing and really, if you can, to insist that there be a robust regulatory environment, if it's going to be available, it needs to be done in a careful way so that consumers know what they're getting.

Rusche: And are protected. A listener says she bought CBD oil and later read that the authorities tested the brands she was using and it contained no CBD at all. What's that about?

Compton: Well, I certainly understand that when we buy a product, we expect it to contain what's in it. But it turns out that the industry that's selling CBD oils is almost completely unregulated. So that means they fall outside the health care regulatory system. We sort of have this assumption that they're part of the health products, but they are not.

They are not considered a health care product by the federal government. So the Food and Drug Administration doesn't have to regulate them and it doesn't fall under their regulations for medications. What that means is that this is a situation of the buyer needing to beware and that many of these so-called CBD products may not contain any CBD or the quantity and potency of CBD could vary from batch to batch or from brand to brand in considerable ways.

So these lax regulations also mean that some of these CBD oil products may contain THC, so they may not just be pure CBD, but may also contain the psychoactive substance. THC.

Rusche: Okay. So are there regulations for these products regarding purity or effectiveness?

Compton: Well, the unfortunate background is that there really isn't much research on products that people are using. States vary in their approaches to testing for purity and effectiveness, but there's no federal standards. So the standards vary and are really subject to how robust a state may be regulating the product itself. One of the concerns I have is the difficulty in doing research on the marijuana that people are using out there.

So this is a concern we can't use federal dollars to investigate and purchase marijuana that may be sold in dispensaries all around the country. That's because it's illegal from a federal perspective. So we can't use federal money to study what people are obtaining from their local dispensaries. An exception is that the DEA may confiscate or purchase marijuana from these dispensaries, and then it can be sent to a NIDA laboratory at the University of Mississippi the NIDA drug supply program for testing.

Then we can test it, but we really can't do this on a widespread basis. And so we have very little information about what's going on in the dispensaries in the many states that have these widespread distribution facilities. Some of the states are doing their own testing. And indeed, some of the disturbing information is that the products being sold in some of these locations may contain herbicides, pesticides or may have a dangerous amount of bacterial contamination.

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Compton: So there may be salmonella or E coli or fungus in these marijuana products. For many individuals, that won't be a health concern. But for anybody with immune compromised situation, marijuana can be quite dangerous for that reason, because they may expose themselves to dangerous bacteria or fungus, which if you have HIV disease or if you have other diseases that impair your immune function, could be extremely risky.

Rusche: Hmm. So what would be a remedy for that?

Compton: Well, I certainly am hopeful that we will be able to modify our current regulatory system to allow research to be done on these dispensary, provided, marijuana products. We also know that members of the public would be willing to share the marijuana, at least a tiny portion of it with researchers so we could understand more about what people are exposing themselves to on a regular basis.

And that kind of research could be very helpful in guiding the public in understanding how to keep themselves healthy and safe. So we'd like to see some changes to the regulatory system to allow more robust research about the marijuana that people are using in practice.

Rusche: Mm hmm. Do you think that's likely to happen?

Compton: Well, some of this may be possible with regulatory change, but some of it may require Congress to take action. And that depends on the public alerting their congressional representatives to this being a potential opportunity for improvements.

Rusche: Good to know. Thank you for your time and for serving on our science advisory board as well. Note this podcast was recorded February 8th, 2019. The materials in these podcasts are the opinions of Dr. Compton and are not the official opinions of the of the National Institute on Drug Abuse. This is Sue Rusche, President and CEO of National Families in Action.

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And thanks to you for listening. Bye.