

From: D'Souza, Deepak <deepak.dsouza@yale.edu>
Sent: Tuesday, March 21, 2017 3:36 PM
To: JudTestimony
Subject: S.B. No. 11 (COMM) AN ACT CONCERNING THE LEGALIZATION AND TAXATION OF THE RETAIL SALE OF MARIJUANA.

To: Members of the Judicial Committee
Re: S.B. No. 11 (COMM) AN ACT CONCERNING THE LEGALIZATION AND TAXATION OF THE RETAIL SALE OF MARIJUANA.

I am writing in opposition to SB 11 in my capacity as a physician, a Professor, a psychiatrist, a clinical researcher and as a member of the Physicians Advisory Board for CT's Medical Marijuana Program and finally, as a concerned father of an adolescent. I am urging you to guide your decision based on the scientific and other evidence, and to carefully consider the effects on the youth of our state.

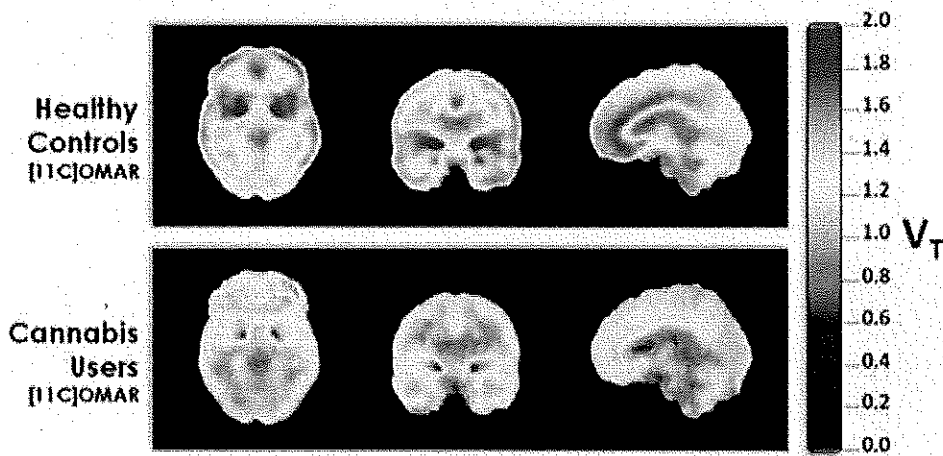
For more than 20 years I have conducted research on cannabinoids at Yale, funded by various institutes of the US National Institute of Health. This research is all in humans and it includes studies on the acute effects of cannabinoids in humans, the effects of chronic repeated exposure to cannabis on the human brain and finally, on developing new treatments for people who are addicted to cannabis and want to stop.

For more information on this I would refer you to a recent presentation that I gave at Yale:
<http://psychiatry.yale.edu/education/grand/2017/0113.aspx>

In brief, there is absolutely no question that cannabis is addictive – there is a wealth of scientific evidence to support this. About 10% who start using cannabis recreationally will become dependent on it, and that percentage almost double is when use is initiated in adolescence. Dependence is characterized by compulsive use, impaired control and continued use despite physical and psychological problems caused or exacerbated by such cannabis. They will have difficulty containing cannabis use, will spend too much time or money spent acquiring, using, or recovering from the effects of cannabis, will make many failed attempts to quit or reduce, will have cravings and a desire to use, and will use in contexts that are potentially dangerous (e.g., driving). In fact, nearly 3 of 10 cannabis users manifested a cannabis use disorder in the last NSDUH survey of 2012-2013. After alcohol, cannabis has the highest rate of dependence or abuse among all drugs; in fact, it is twice as prevalent as cocaine or opioids, in part because of its widespread use. Please note that there are no approved or effective treatments for cannabis dependence. *Therefore, we will likely have more people in CT addicted to cannabis without being able to offer them any effective treatments. Furthermore, this will occur in the context of shrinking mental health and addiction services in our state and nationally.*

Below is an image from my lab from a brain imaging study of daily cannabis users. We find that daily users have about a 15% reduction in their brain cannabinoid receptors with once a day smoking. These results were published in a one of the highest impact peer reviewed scientific journals last year.

Lower Brain Cannabinoid Receptors in Cannabis Dependent individuals



15% reduction in brain cannabinoid receptors

D'Souza et al., 2016

As the experience in Colorado is showing there are number of negative health related outcomes. Colorado and other states that have legalized cannabis have the highest rates of cannabis use by high-schoolers. One of my biggest concerns is the effects of cannabis on the developing brain. There is accumulating evidence that the brain of adolescents is more vulnerable to the effects of cannabis. Those who start using cannabis in adolescence are more prone to a number of negative outcomes including lower IQ, memory and attentional problems that persist even if they stop using cannabis. Exposure to cannabis in adolescence confers a 2- to 4- fold higher risk for schizophrenia, perhaps the most serious of mental illnesses. That the brain is most vulnerable to the effects of cannabis in adolescence has now been robustly demonstrated in animal experiments. The highest rates of adolescent cannabis use is in those states that have legalized cannabis e.g., Colorado. Therefore, I am very concerned that by legalizing cannabis in CT, we will undoubtedly see an increase in adolescent cannabis use and years later by the negative consequences described above. For example, we might expect an increase in the rates of schizophrenia, which is associated with enormous indirect and direct costs to the state. ***Is this what we want for our children and the future adults of our state?***

Another important issue is the safety of our roads. There is irrefutable evidence that cannabis use is associated with motor vehicle accidents and mortality. Our law enforcement colleagues don't as yet have the tools to test people for cannabis intoxication. As we are studying in our laboratory, low doses of alcohol that may be below the legal limit, when combined with low doses of cannabis, can impair simulated driving to level that is associated drunk driving. In Colorado, cannabis-related traffic deaths increased 48 % following legalization. ***Is this what we want for our drivers in CT?***

I do not see how legalizing cannabis is going to make our kids smarter, better athletes, or make for better families, towns or society. There is absolutely no scientific evidence that either acutely or chronically cannabis is going to improve the lives of people or society. For those who require cannabis for medical reasons, we already have a program for them I understand that the main driving forces behind legalization is the potential for revenue. I urge the committee to carefully consider the potential costs related to the consequences of legalizing cannabis – motor vehicle accidents, mental health and addiction, etc. ***Who will pay for all the public health consequences of legalizing?***

I'd pleased to send you references and any other material you may need. Please carefully consider the public health consequences of legalization.

Sincerely,

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