

In Defense of Our Brains

Scarsdale Task Force on Drugs and Alcohol

April 1, 2016

“This is not a war on drugs , it is a defense of our brains!” Dr. Bertha Madras, PhD

“The brain is the repository of our humanity, wisdom, our ability to love, learn, create, compute, compose, contemplate, think, to remember, to feel empathy for others, to administer justice and compassion. How precious, unique and and fortunate we are to be the bearer of unclouded minds. We are united in a passionate desire to defend the minds of our most vulnerable- OUR YOUTH.”

Scarsdale Use Rates vs. National Averages

Scarsdale High School

Drug	9	10	11	12
Cig/Tobacco	1.4	2.0	2.7	9.1
Alcohol	9.6	30.6	41.9	59.9
Marijuana	4.8	10.2	16.1	35.7
Rx Drugs (abuse)	2.0	1.6	0.6	2.4

National Averages (YRBS)

Drug	9	10	11	12
Cig/Tobacco	15.5	19.9	27.2	28.2
Alcohol	24.4	30.9	39.2	46.8
Marijuana	17.7	23.5	25.5	27.7
Rx Drugs (abuse)	12.4	17.3	20.8	21.3

In Defense of Our Brains

How cannabis gets to work on our brains

Frontal cortex—decision making, social skills, high-level consciousness. Rich in receptors. Drug's action here crucial to euphoria and dreamy feeling

Hippocampus—information storage and retrieval. Drug's ability to suppress cell firing here may explain short-term effects on memory

Basal ganglia—movements and postural control. Rich in receptors

Cerebellum—movements. Rich in receptors. Drug's action here explain effects on coordination

Nucleus accumbens—part of a "reward pathway" regarded by some as a key player in addiction. Cannabis's action here is controversial

Brain stem—basic bodily functions. Cannabis's lack of effect here explains why even high doses are not life-threatening



C'mon, How Bad is It?

Marijuana is **UNLIKELY** to cause death by overdose

WHY?

Marijuana rarely hits the brain stem which regulates heart rate and breathing

Heroin and other opioids are heavily targeted in the brain stem and therefore lead to more deaths

BUT.....

C'mon, How Bad is It?

Intoxication from marijuana can lead to fatal injuries or emergency room visits

1. Driving becomes dangerous- Drugged Driving
2. Extreme anxiety with high doses which leads to panic attacks
3. Can cause psychosis in vulnerable people, loss of reality and paranoia
4. Marijuana Poisoning - Can last for several hours

Marijuana effects judgment, perception and coordination!

Marijuana Use and Higher Brain Function

Even Occasional Use Can:

- Impair learning, working memory
- Reduce attention span and concentration
- Reduce ability to plan
- Reduce organizational skills
- Reduce the capacity for decision making
- Reduce ones perception of facts
- Reduce emotional control
- Reduce behavioral control
- Impair motor coordination
- Increase impulsivity
- Increase hunger
- Distort perception of time, distance, sounds

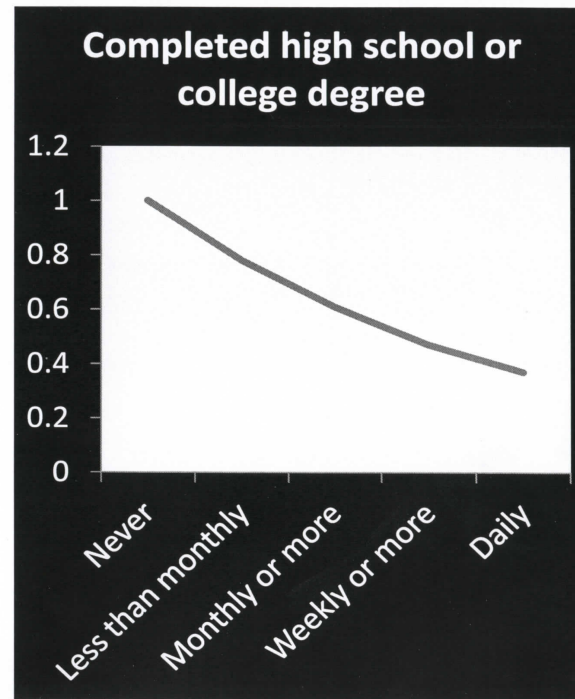
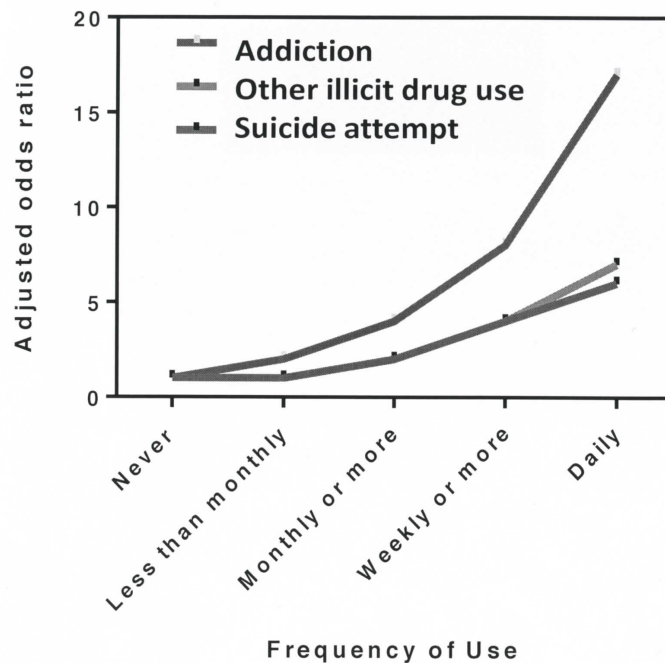
Other Possible Impacts of Marijuana

- Addiction to Other Drugs
- Brain Changes
- Loss of IQ points
- Cognitive Impairment → long & short term
- Poor Grades (higher incidence of school drop out)
- Engagement in Risky Sexual Behavior
- Motivation
- Possible Link to onset of Schizophrenia

Other Possible Impacts of Marijuana

Motivation

More Marijuana Use, Worse Outcomes



Silins et al, Lancet Psychiatry 1: 286–93, 2014; n= 2537-3765; 13-30 years

Is Legalization the Answer?

Colorado → 1 year change: 2013-14

Traffic Deaths →	Increased
Driving Under the Influence →	Increased
Marijuana Related ER Visits →	Increased
Marijuana Related Hospitalizations →	Increased
Marijuana Poisoning →	Increased
THC Production Lab Explosions →	Increased

So What Can *YOU* Do?

So What Can YOU Do?

1. Continue to educate yourself about marijuana. Just because it won't kill you doesn't make it safe
2. Share what you learned with friends and family- not just teens
3. Follow @DATFScarsdale on Instagram; Ask others to do so as well