

Understanding Addiction in Our Community, the Importance of Prevention and Marijuana as a Gateway Drug

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Tuesday 4/18/2017

A presentation for the community symposium: **Pathways to Substance Abuse Addiction**, hosted by Stop Heroin Now and Affiliated Clinical Services at Central Middle School, 1100 Cedar St, Hartford, WI 53027-2310.

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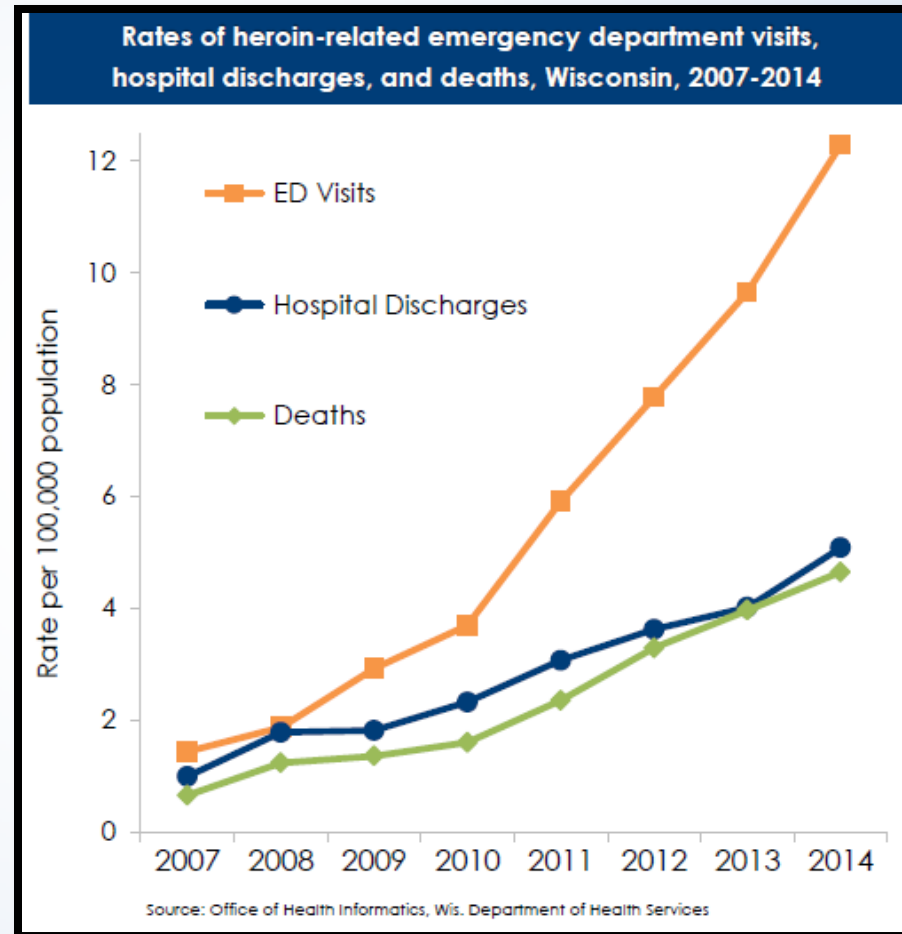
Presentation Objectives

1. Where we are at with the opiate crisis and the prevalence of drug use in our community.
2. To understand the various approaches and key stake holders in fighting the opiate crisis in our community and the importance of protecting our youth.
3. To understand the nature of addiction, who is at risk and why pot is a key gateway drug for those individuals.
4. What we can do as a community that is effective.

Understanding the Cause of Addiction and Mechanics of Recovery Benefits our Community ?

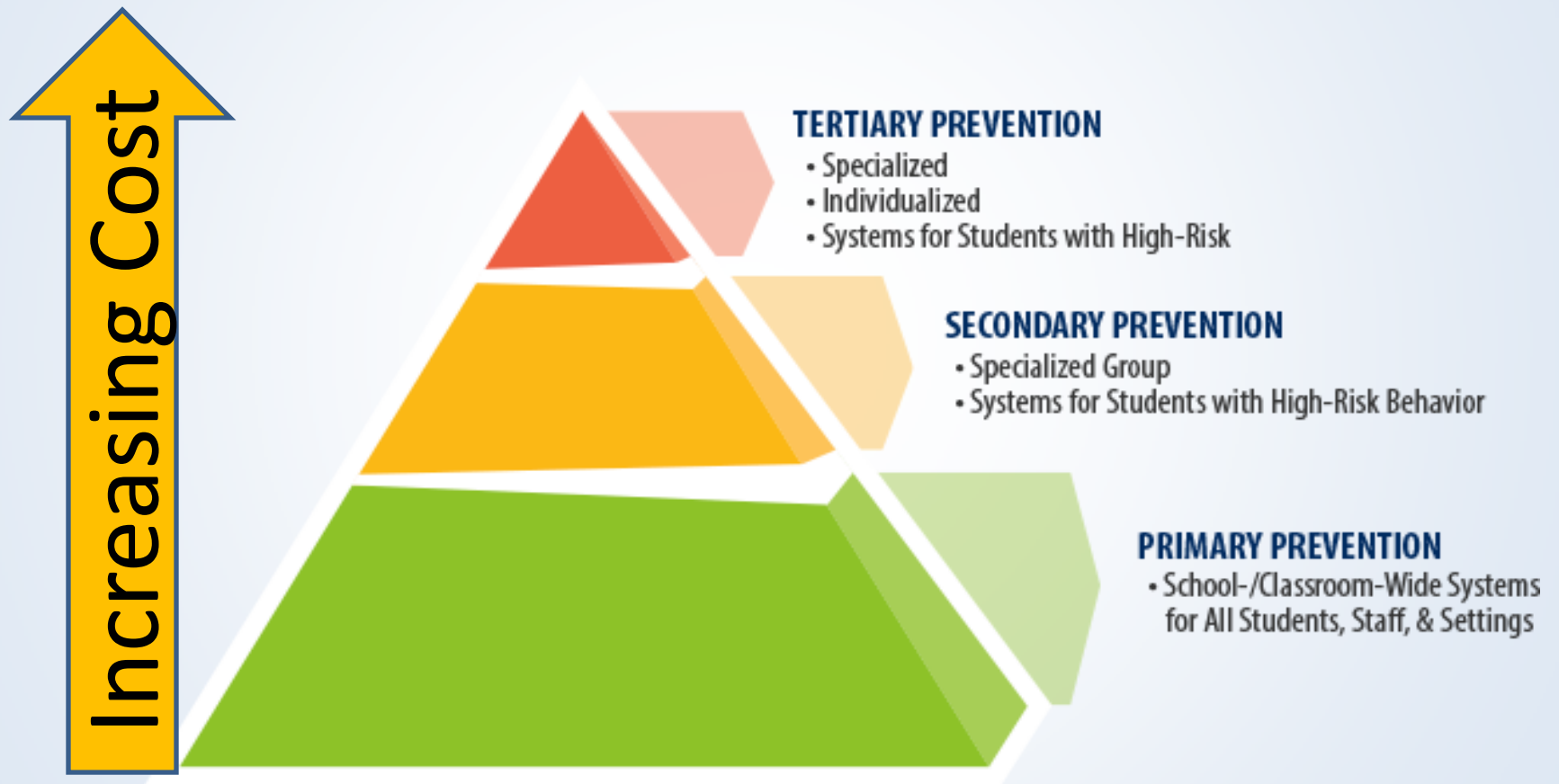
- Most Washington County crime and police activity is drug related.
- Drug use is becoming more prevalent as a community issue in a variety of ways.

Year	Approx. Narcan	Drug OD
2008	?	6
2009	?	6
2010	?	6
2011	?	4
2012	?	5
2013	30	14
2014	80	18
2015	80	16
2016	80	18 +5



Primary Prevention is Cost Effective

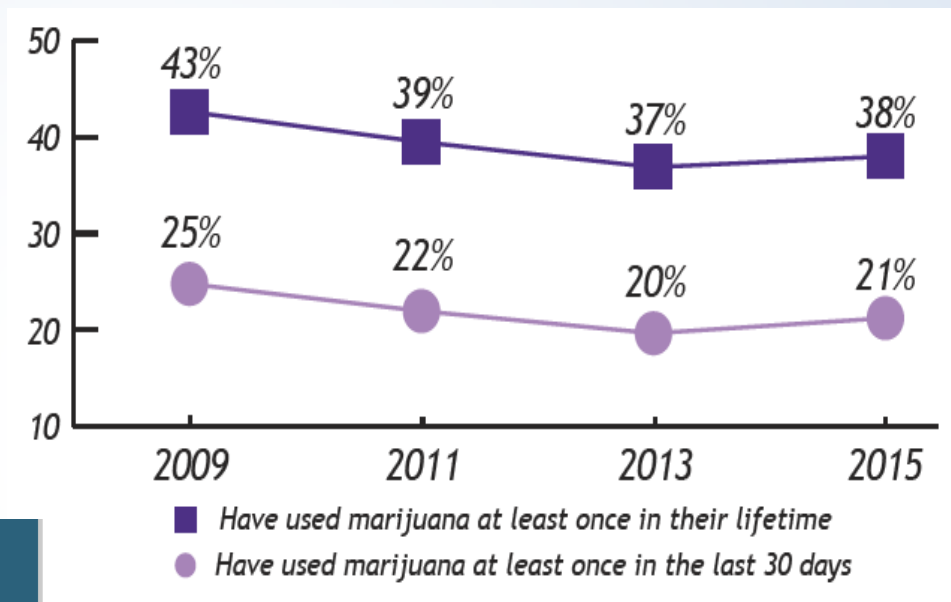
Best way to fight the heroin crisis is to prevent it and target children and adolescents



Legalization will very likely lead to increased teenage use

Colorado first legalized recreational marijuana use in 2012. The trend in **Life Time Use** and **30-day Use** among high school students is reversing (but is not yet statistically significant from prior years). The trend continues to decrease in Wisconsin. This very likely a result of a decrease in **perceived harm** and **subjective norm** (what is normal).

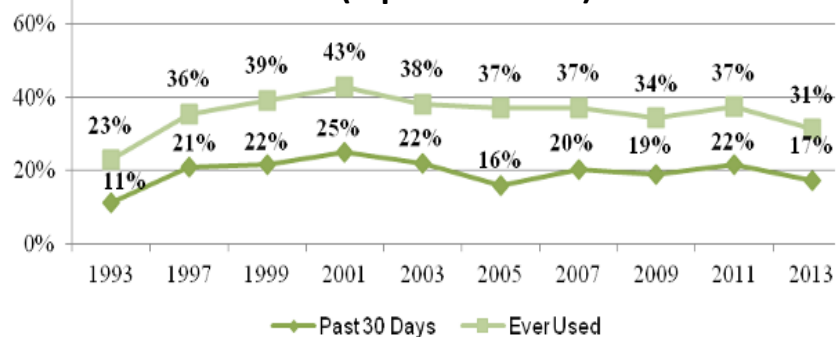
Colorado (equal 9th – 12th)



Monitoring the Future Study: Trends in Prevalence of Marijuana/ Hashish for 8th Graders, 10th Graders, and 12th Graders; 2016 (in percent)*

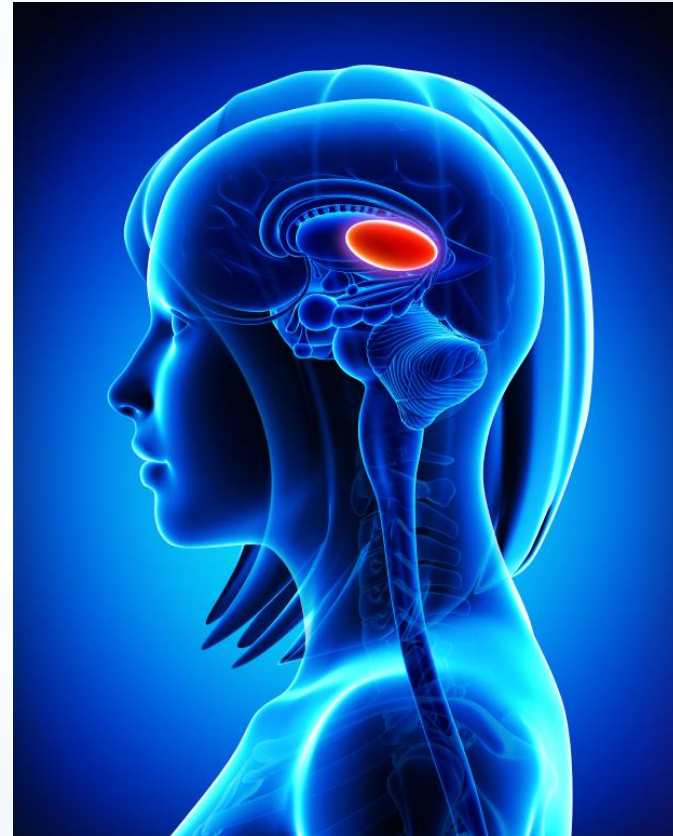
Drug	Marijuana/ Hashish		
Time Period	Lifetime	Past Year	Past Month
8th Graders	[12.80]	[9.40]	[5.40]
10th Graders	29.70	23.90	14.00
12th Graders	44.50	35.60	22.50

Wisconsin (equal 9th – 12th)

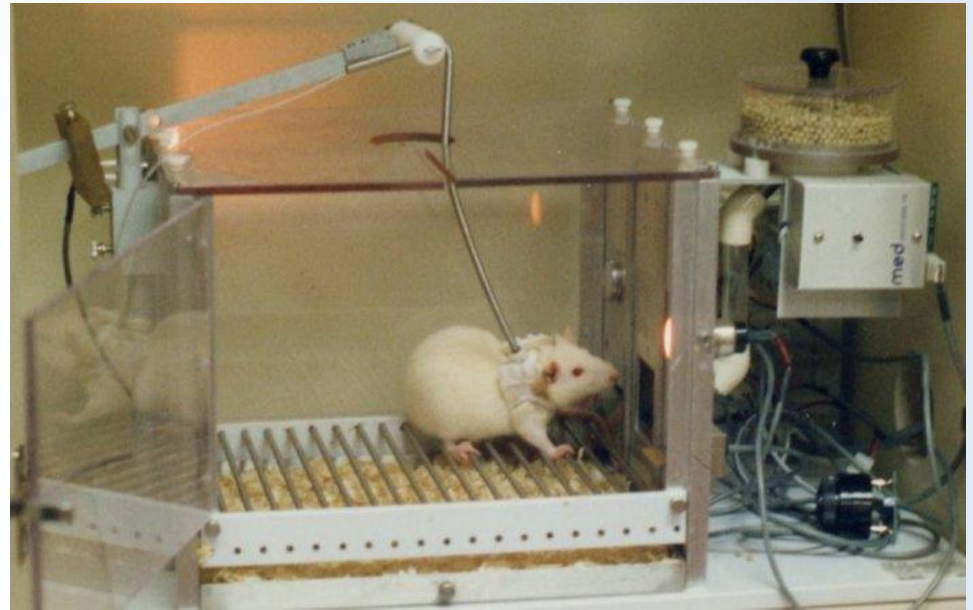
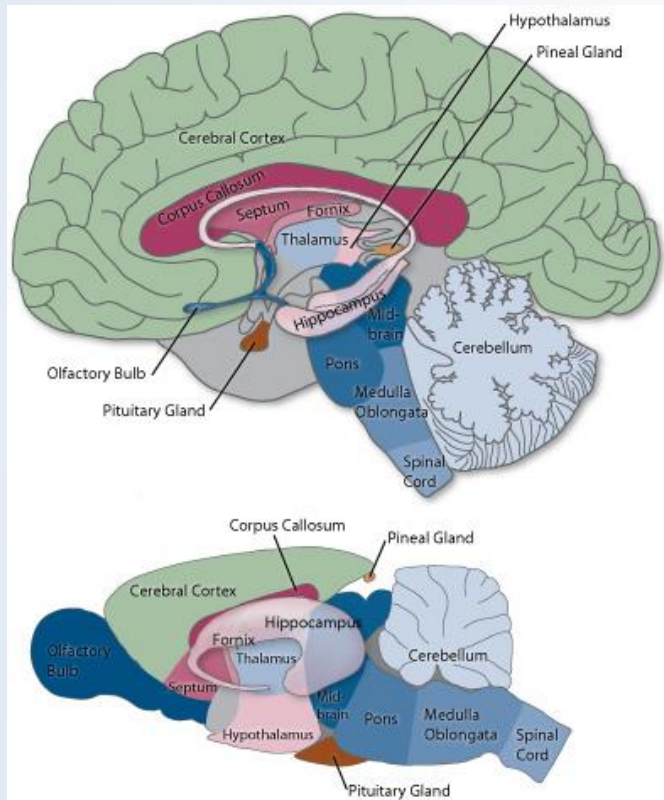


The Power of Biology and the Reward Center that Drives our Behavior

- The Nucleus Accumbens (reward center) is primarily there for **adaptive** purposes.
 - Hunger drive.
 - Sex Drive
- Part of the Limbic System, behavior is very primitive



Animal Studies Show How the Brain Becomes Hijacked by Drugs and Alcohol

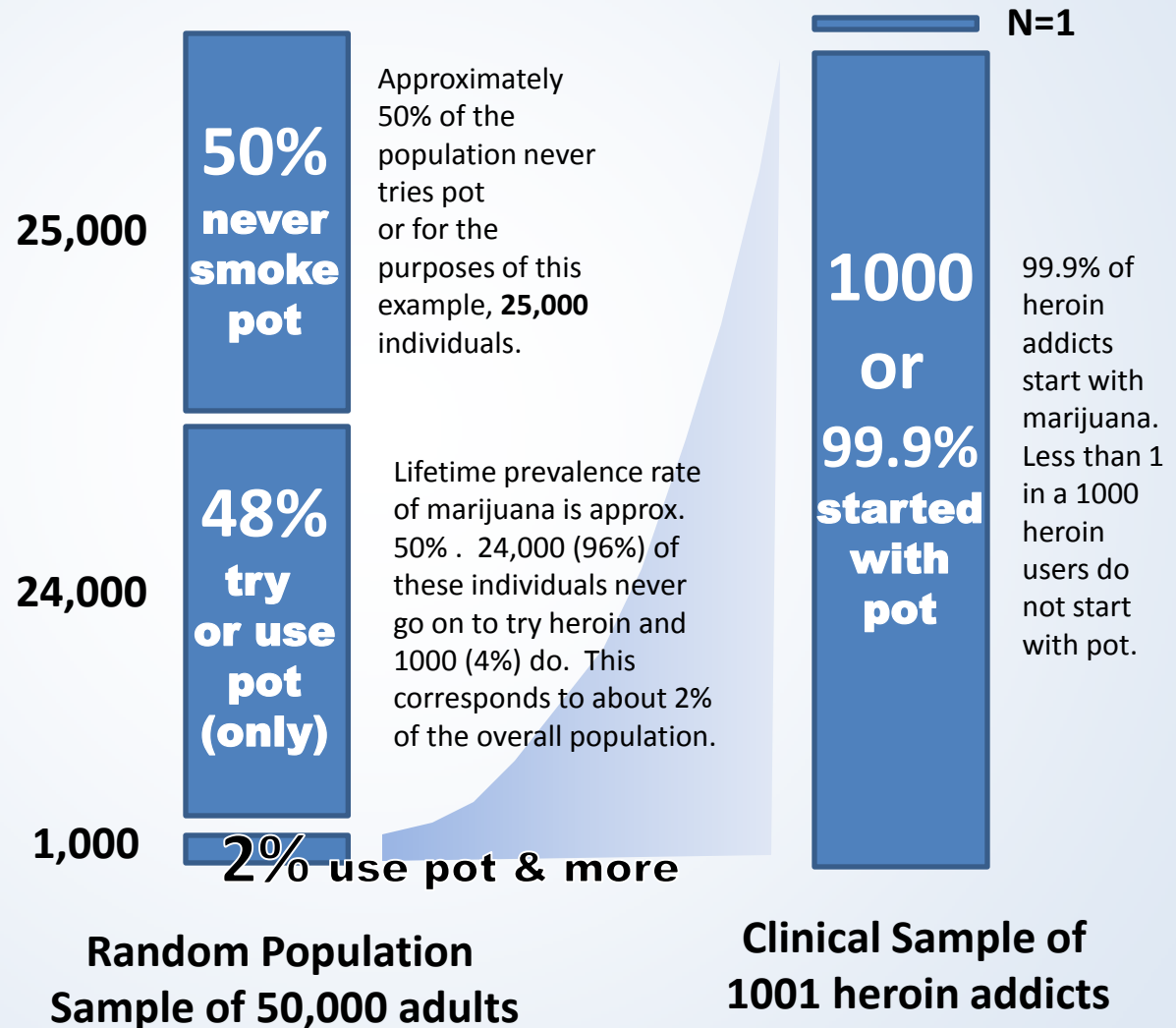


Addiction is cunning, baffling and powerful because it is essentially a tug-of-war between the inner brain (primitive limbic system) and the outer cortex (rational thought and common sense).

DRUGS DELIVER 2 TO 10 TIMES THE DOPAMINE AS FOOD OR SEX!

Understanding the Gateway Paradox

- There is a lot of pro-pot research to show that marijuana is NOT a gateway drug.
- Different studies study different samples
- For clients at risk for addiction, marijuana most certainly is a critical gateway drug!



Genetic Risk for Chemical Dependence

	MZ	DZ	Genetic Component
Eye Color	100%	28%	Obvious
Substance Abuse	47%	8%	High
Major Depression	27%	12%	Moderate

MZ= 1 sperm, 1 egg, 100% genetically similar, DZ= 2 eggs, 2 sperm, 50% genetically similar.

Genetic Risk		Exposure or Use		Chemical Dependence
1	X	1	=	1
1	X	0	=	0
0	X	1	=	0
0	X	0	=	0

1 = present, 0 = absent.

Health risks like heart disease, diabetes and chemical dependence are usually an interaction between inherited biological risk factors and environmental risk and opportunity. Family history can be mitigated by reducing risk factors and increasing protective factors.

Kendler, K., and Prescott, C. Cannabis use, abuse, and dependence in a population-based sample of female twins. American Journal of Psychiatry 155(8):1016-1022, 1998.

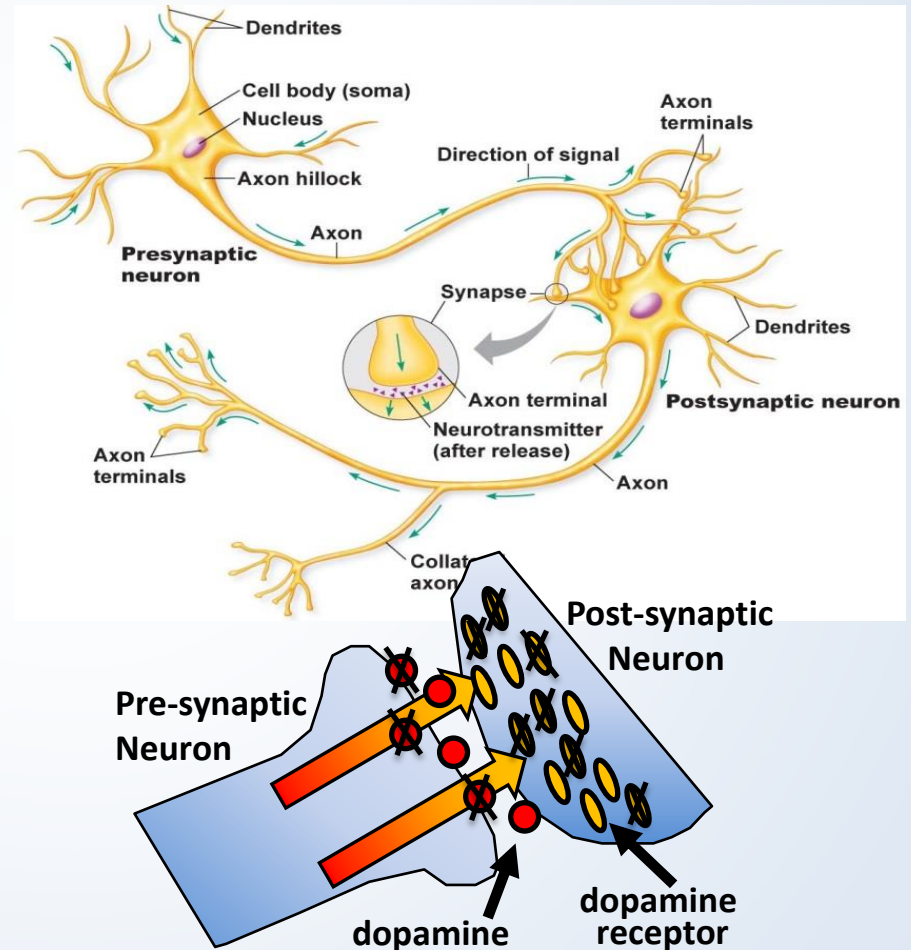
So What is Actually Inherited

The Dopamine Hypothesis of addiction (two possibilities)

TWO POSSIBILITIES

- 1) Lower levels of Dopamine production in the pre-synaptic neuron
- 2) Lower levels of Dopamine receptors in the post-synaptic neuron

This typically leads to more intense sensation seeking. Drugs experienced as very pleasurable. Those with addiction histories are typically not over stimulated as easily. Other clients without a history ARE over stimulated, get sick.



Understanding Nature of Behavioral Health Risks and the Influence of Genetic Predisposition

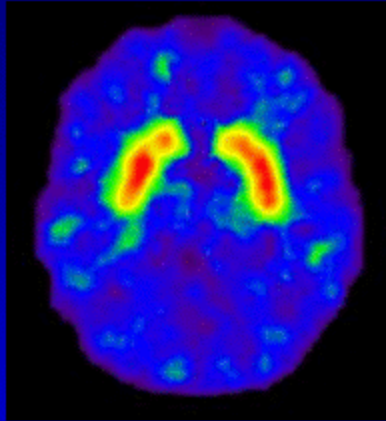
Marijuana is not simply addictive or not addictive. Addiction is more accurately understood as an interaction between an individual's initial and early choice to use drugs and their inherited biology. Alcohol and some drugs, like marijuana may not be highly addicting to everyone, but when teenagers experiment and happen to have specific genetics, they are at much higher risk of developing life-long issues with dependence. This type of interaction is also true for heart disease, diabetes and certain types of cancer; it is a combination of our choices and our inherited risk factors that increase our risk for disease. Well designed twin studies now show that it is environmental factors like access to drugs, family attitude and peer group that mostly determine if a teen begins to experiment with marijuana, but it is largely genetic factors that determine if this progresses to dependence or the use of other harder drugs (Kendler & Prescott, 1998; Pickens, et. al, 1991). **For this reason, it is imperative that teens stay away from marijuana and parents and professionals don't give mixed messages that it is a harmless drug.**

So what is it that is actually inherited?

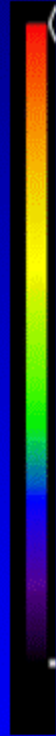
Drugs of abuse cause individuals to experience pleasure because they either mimic or produce dopamine in our brain's reward system, called the nucleus accumbens. Individuals at risk for substance dependence have a reward system that is deficient in natural dopamine transmission. Animal studies show dopamine levels 25% to 30% lower in drug-preferring strains of rats (Gowangwer, 1989). The exact structural differences in brain cells are still unknown, but it is thought to be a deficit in either 1) the number of post-synaptic dopamine receptors, or 2) the amount of dopamine produced in response to a pleasurable stimulus. The under-sensitivity of this system, combined with the intense rush of pleasure caused by most drugs is thought to make drug use more addicting for these individuals. Additionally, on-going drug use further reduces the sensitivity of the dopamine system, making it more difficult to experience pleasure without drugs. So far, there are no laboratory tests that accurately identify individuals at risk, but there are epidemiological correlates that have accurately identified those teenagers at highest risk of developing drug dependence in adulthood.

Individual Differences in Response to Drugs: DA Receptors influence drug liking

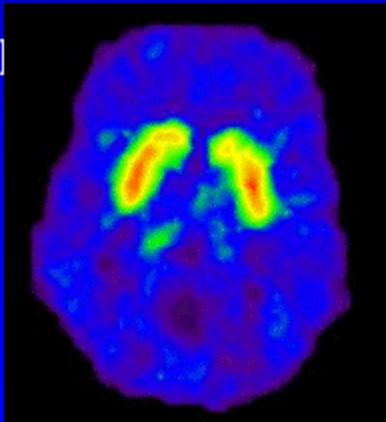
**High DA
receptor**



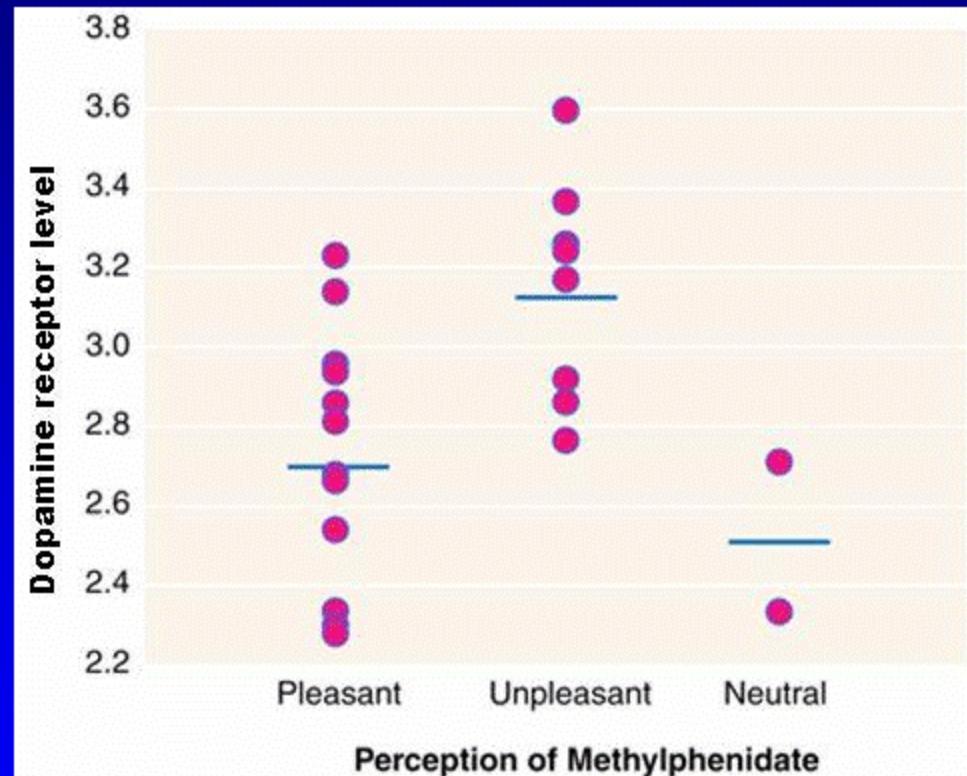
high



Low DA receptor

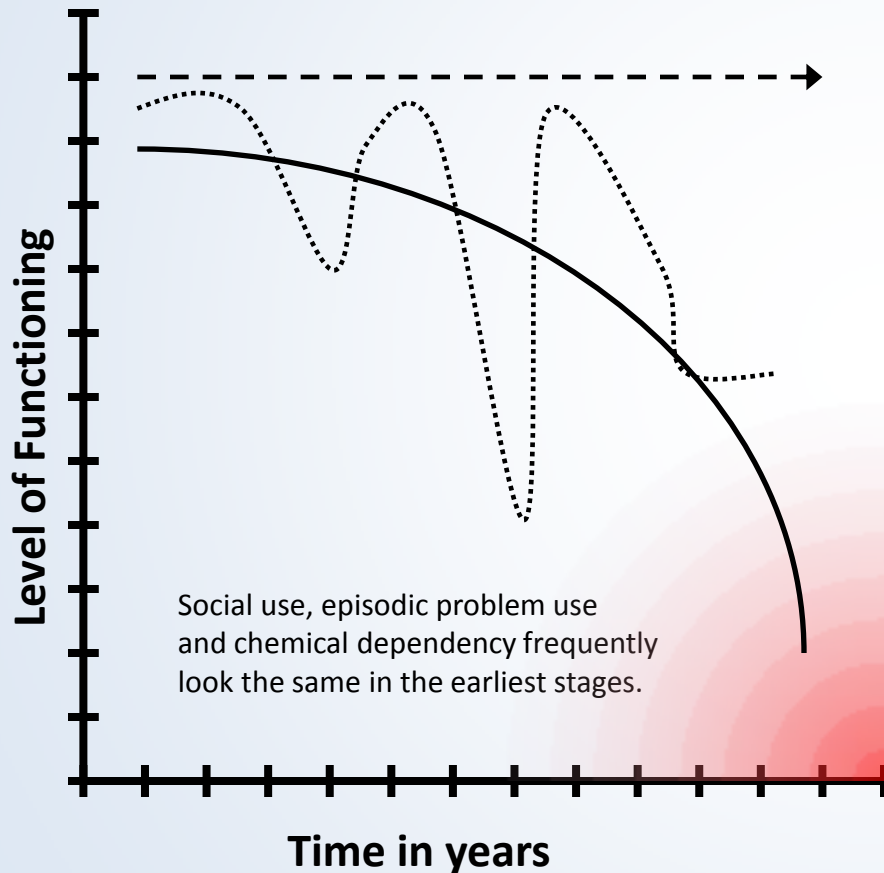


low



As a group, subjects with low receptor levels found MP pleasant while those with high levels found MP unpleasant

EARLY EPIDEMIOLOGICAL RISK FACTORS FOR ADOLESCENT SUBSTANCE ABUSE



- early onset before 15
- ineffective parenting (*lack of nurturing and/or authority*)
- a chaotic home environment
- lack of a significant relationship with a caring adult
- parent substance abuse, mental illness or criminal behavior
- + • classroom aggression and impulsivity
- + • academic failure
- + • poor social coping skills
- + • association with drug using peers
- + • distorted perceptions of harm, extent and acceptability of drug-abuse

(• = parents knowledge + = school's knowledge too)

NIDA (2003). Preventing Drug Use among Children and Adolescents (In Brief). Retrieved April 15, 2017, from <https://www.drugabuse.gov/publications/preventing-drug-use-among-children-adolescents-in-brief>

RESEARCH-BASED TIPS AND IDEAS FOR PARENTS THAT MAKE A DIFFERENCE

GET INVOLVED

Kids who are close to their parents and caregivers are least likely to engage in risky behaviors. The more involved you are in your children's lives, the more valued they will feel and the more likely they will respond to you.

- 1. Establish "together time."** Establish a regular weekly routine for doing something special with your child - even something as simple as going out for ice cream, playing with your infant or child, or reading your infant or child a book.
- 2. Eat together as often as you can.** Meals are a great opportunity to talk about the day's events - to unwind, reinforce, bond. Studies show that kids whose families eat together at least 5 times a week are less likely to be involved with drugs or alcohol. Turning off the TV while eating together increases the effectiveness.
- 3. Set clear rules and enforce them fairly.** Children need to know what the rules are in your home and what the consequences for breaking the rules will be. Even though the types of rules and consequences for a toddler are different than the ones for a 10-year-old, they must be enforced fairly and consistently.

PRAISE & REWARD

Nothing encourages a child more than his or her parents' approval. The right word at the right time can strengthen the bond that helps keep your child away from drugs. Expressions of love, appreciation and thanks go a long way.

- 1. Reward appropriate behavior consistently and immediately.** Provide loving guidance, limit-setting, and encouragement. Make consequences of a misbehavior reasonable. Encourage healthy and safe decision making.
- 2. Accentuate the positive.** Emphasize the things your kids do right. Restrain the urge to be critical. Affection and respect - helping your child feel good about himself - will reinforce good (and change bad) behavior far more successfully than embarrassment or uneasiness.

United States Office of Drug Control Policy. (2000). Parenting skills : Tips & ideas to help you make a difference

LEARN TO COMMUNICATE

The more you talk with a child, the more at ease a child will feel about discussing sensitive issues with you.

- 1. Be a good listener.** Ask and encourage questions. In your own words, repeat back to your child what your child says to you. Ask for his or her input about family decisions. Showing your willingness to listen will make your child feel more comfortable about opening up to you.
- 2. Give honest answers.** Don't make up what you don't know; offer to find out. If asked whether you've ever taken drugs, let them know what is important: that you don't want them using drugs.
- 3. Name and identify feelings.** Show appropriate ways to express feelings and talk about how to recognize emotions expressed by others. Include appropriate ways and times to say "no," judging the safety of situations.

WALK THE WALK

Be a role model — the person you want your kid to be.

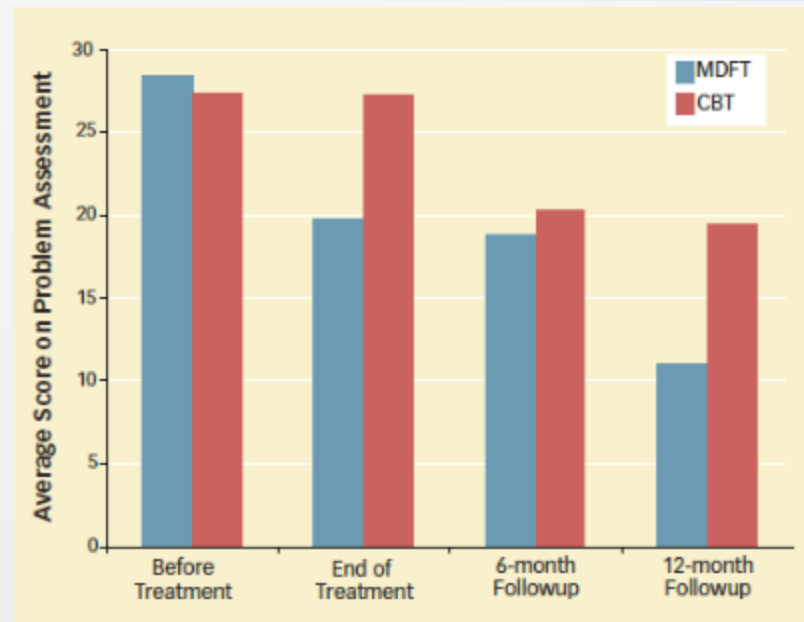
- 1. Be a living, day-to-day example** of important values. Show the compassion, honesty, generosity and openness you want your child to have.
- 2. Know that there is no such thing as "do as I say, not as I do."** If you take drugs, you can't expect your child to take your advice. Seek professional help if you need it. If you smoke, try to stop. Always step outside to smoke until you can stop. Keep your kids' air clean.
- 3. Establish rules for taking medications safely.** Use danger labels on medications. Talk about common medications/substances and their uses, and options available when not feeling well.

The Importance of Family Therapy in Adolescent Substance Abuse

In Family Therapy, Adolescent drug abuse is viewed as a complex phenomenon in which personal issues, interpersonal relationships, overall family functioning, and social forces must all be addressed to effect enduring change.

Multidimensional Family Therapy for Adolescent Drug Abuse Offers Broad, Lasting Benefits

An approach that integrates individual, family, and community interventions outperformed other treatments. December 01, 2010 Carl Sherman, NIDA Notes Contributing Writer



The Staying Power of Multidimensional Family Therapy:

Differences between Multidimensional Family Therapy (MDFT) and cognitive-behavioral therapy (CBT) in reducing teens' social and behavioral consequences of drug abuse, as measured by the Personal Experience Inventory, were most pronounced a year after the end of treatment. [Read the full description of The Staying Power of Multidimensional Family Therapy.](#)

Summary of the Science of Addiction

- 1) Primary and secondary prevention are more cost-effective approaches to beating the opiate epidemic. Addiction is more complex than simply categorizing pot as being addictive or non-addictive.
- 2) Legalizing pot decreases perceived harm and increases subjective norm. Teenage experimentation / use likely to increase as a result.
- 3) Some teenagers (roughly 10%) are born at moderately higher risk of having depleted dopamine production or receptors. Overall genetic risk is 30% to 50%. Environmental exposure plays a big role. For these teens, staying away from pot is essential.
- 4) From a community stand point, primary and secondary prevention will always be more cost effective. Understanding the nature of addiction, identification and teaching abstinence is key. Parents and schools are key to these efforts.