Is Marijuana Really a Problem?

Kevin P. Hill, M.D., M.H.S.
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McLean Hospital Division of Alcohol and Drug Abuse Treatment
khill@mclean.harvard.edu

Disclosure

- I have no financial relationship with a commercial entity producing health-care related products and/or services.

- Funded by the National Institute on Drug Abuse.

- Meda Pharmaceuticals has graciously agreed to provide some of the medications used in our studies.

My Background

- Harvard Longwood Psychiatry Residency.

- Robert Wood Johnson Clinical Scholars Program at Yale.

- Board Certified in General Psychiatry and Addiction Psychiatry.

- McLean staff since 7/09, NIDA grant 3/11.

Research Interests

- Smoking: marijuana, tobacco.

- Combination treatments: multiple disorders.

- Behavioral interventions plus medications.

- Multiple medications.

Why so complicated?

- Can't paint with a broad brush.

- Many misguided by their own experiences.

- Math can be tricky.

Marijuana Myths

- Not harmful

- Not addictive

- No withdrawal

Cannabis / Marijuana

Considered a "soft" drug, distinguishing it from cocaine, heroin, meth, lsd/peyote

- dependence / addiction potential?

- physical dependence and physical harm?

- severity of consequences?

- are treatments needed?

- legalization? Decriminalization?

…it's considered different by many people, including some addiction scientists…….it is controversial!

COMPARISONS

- **more similar than dissimilar to other substances that are considered "drugs of abuse."**

- **Like other substances, it is used primarily for its positive (and negative) reinforcing effects.**

- **a subset of persons who use marijuana go on to have problems…some serious, some not so serious.**
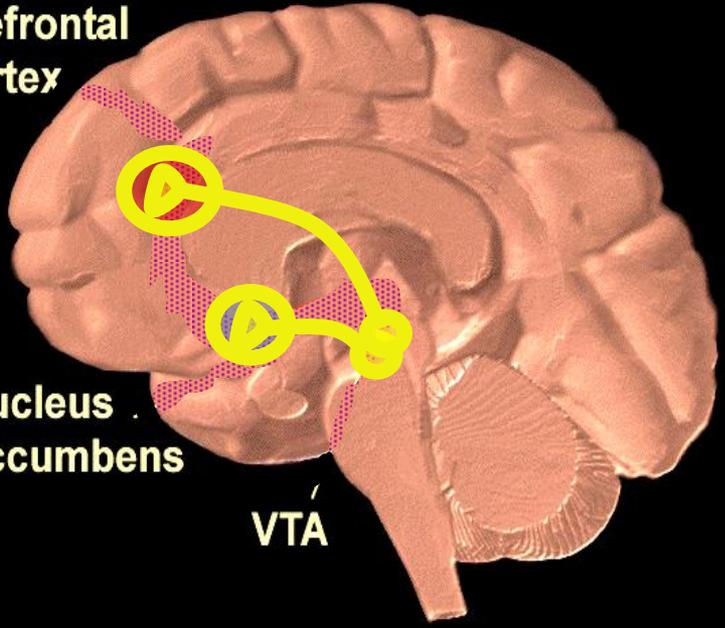
IT IS HARMFUL!

- Early onset leads to poor cognitive function (Pope 2003, Gruber 2011)

- ⬆ anxiety (Crippa 2009)

- ⬆ depression (Degenhardt 2003)

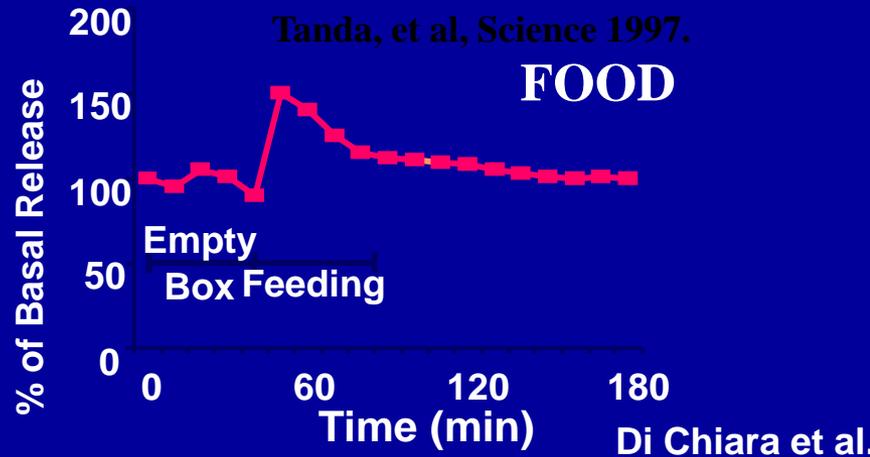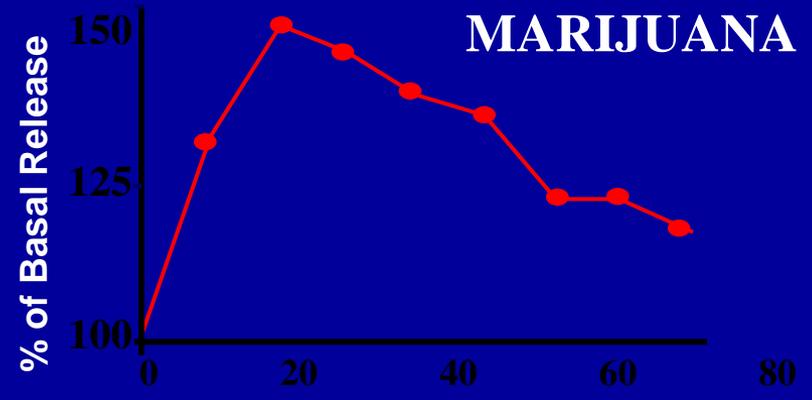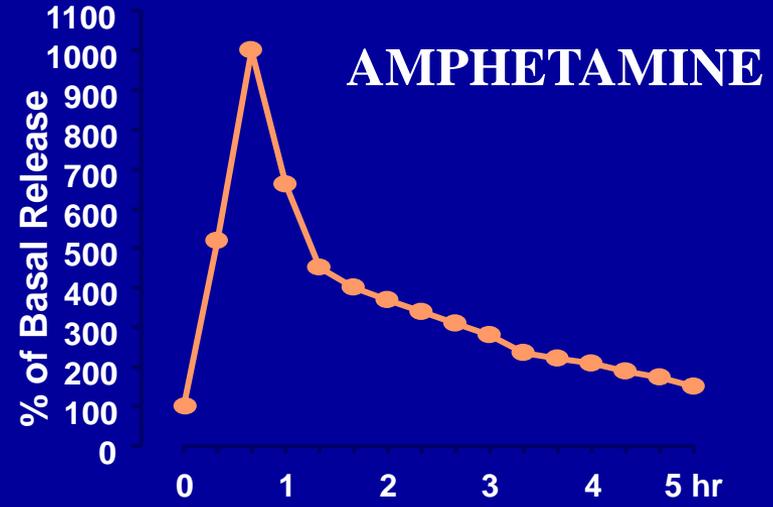- ⬆ risk of psychosis (Kuepper 2011, Large 2011)

IT IS ADDICTIVE!

AMPHETAMINE

MARIJUANA

Tanda, et al, Science 1997.

FOOD

Empty
Box Feeding

Drugs of abuse increase DA in the Nucleus Accumbens….triggers the neuroadaptions that result in addiction?

Di Chiara et al.

prefrontal cortex

nucleus accumbens

VTA

Genetic Influences

Twin Studies:

Genetic influences 50-75% of variance in susceptibility to cannabis use disorders.

Linkage studies:

regions on chromosomes 1, 3, 4, 9, 14, 17 and 18, candidates with biological relevance *MGLL*, *ELTD1.*

Gene association studies

- genes posited to have specific influences on cannabis use disorders: *CNR1*, *CB2*, *FAAH*, *MGLL*, *TRPV1* and *GPR55.*

- genes from neurotransmitter systems: non-specific influence *GABRA2*, *DRD2* and *OPRM1.*

There is Withdrawal!

- Marijuana (cannabinoid) withdrawal has been demonstrated in:
  - Non-human studies (primate, rodent, dog)
  - Clinical survey studies
  - Human inpatient/outpatient laboratory studies

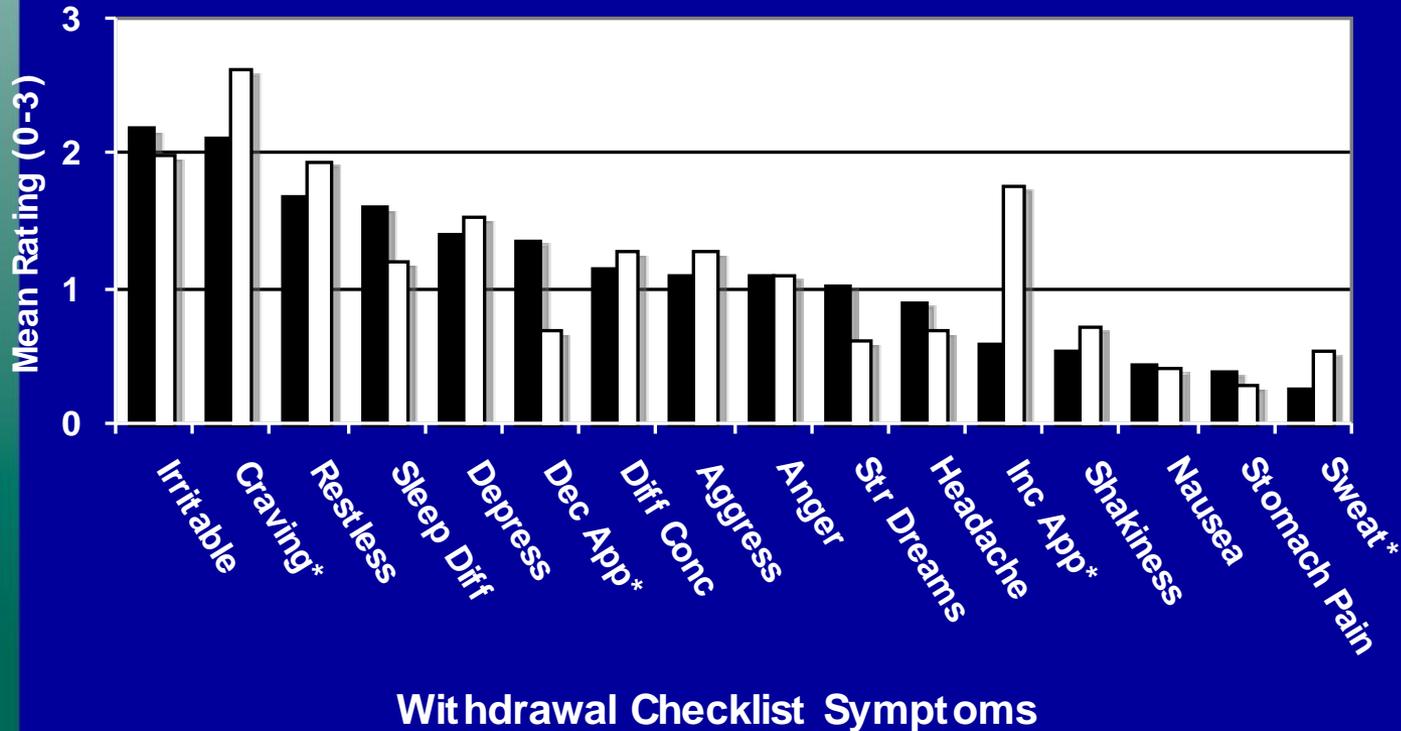   (Khouri & Pope, Budney et al., Haney et al. Copersino, Gorelick et al., …..)

Comparing Cannabis and Tobacco Withdrawal

(Vandrey et al., 2005; Vandrey et al. 2008, Budney et al., 2009)

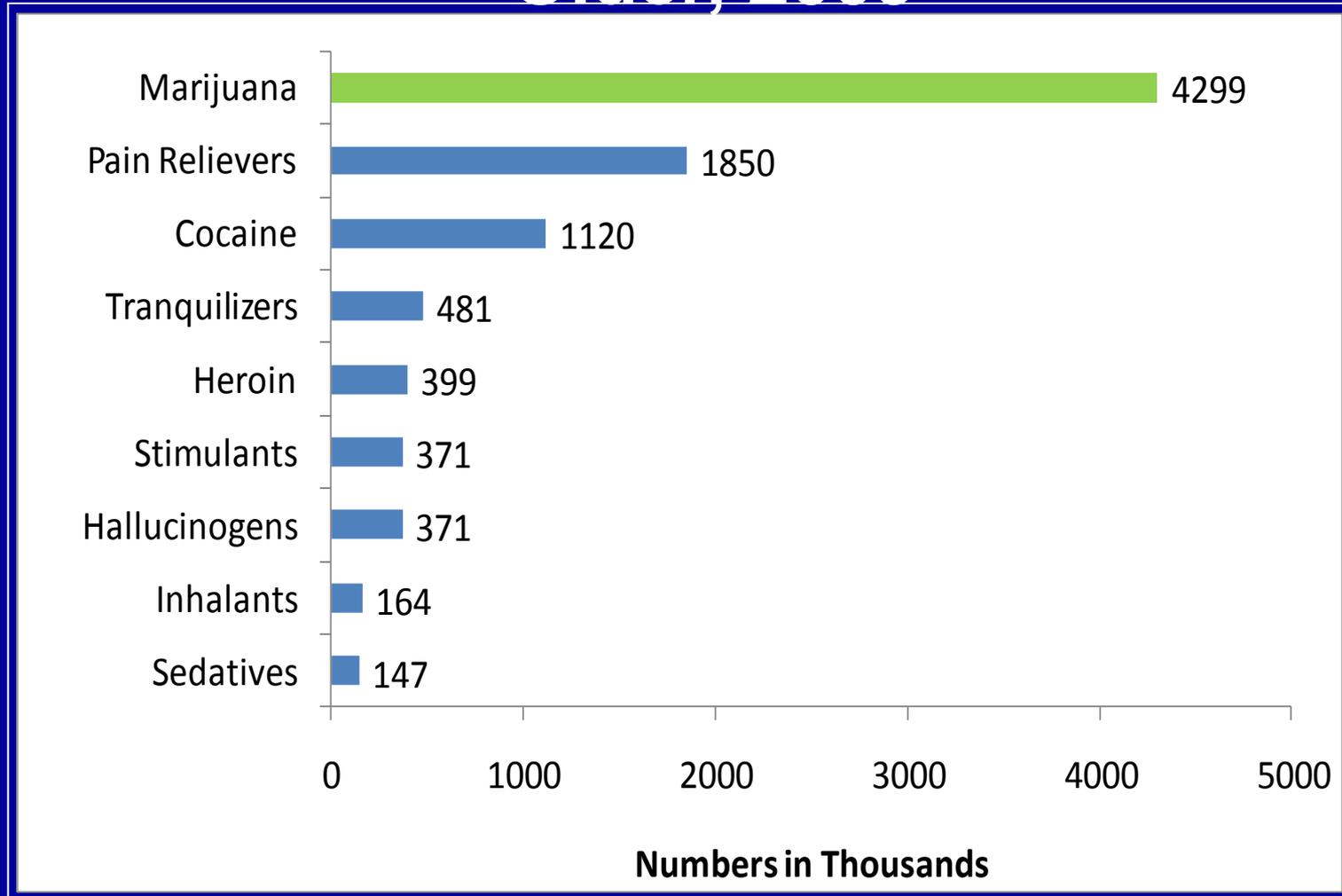# Marijuana Use: Scope of the Problem

Dependence or Abuse on Specific Drugs in the Past Year Among Persons 12 or Older, 2009

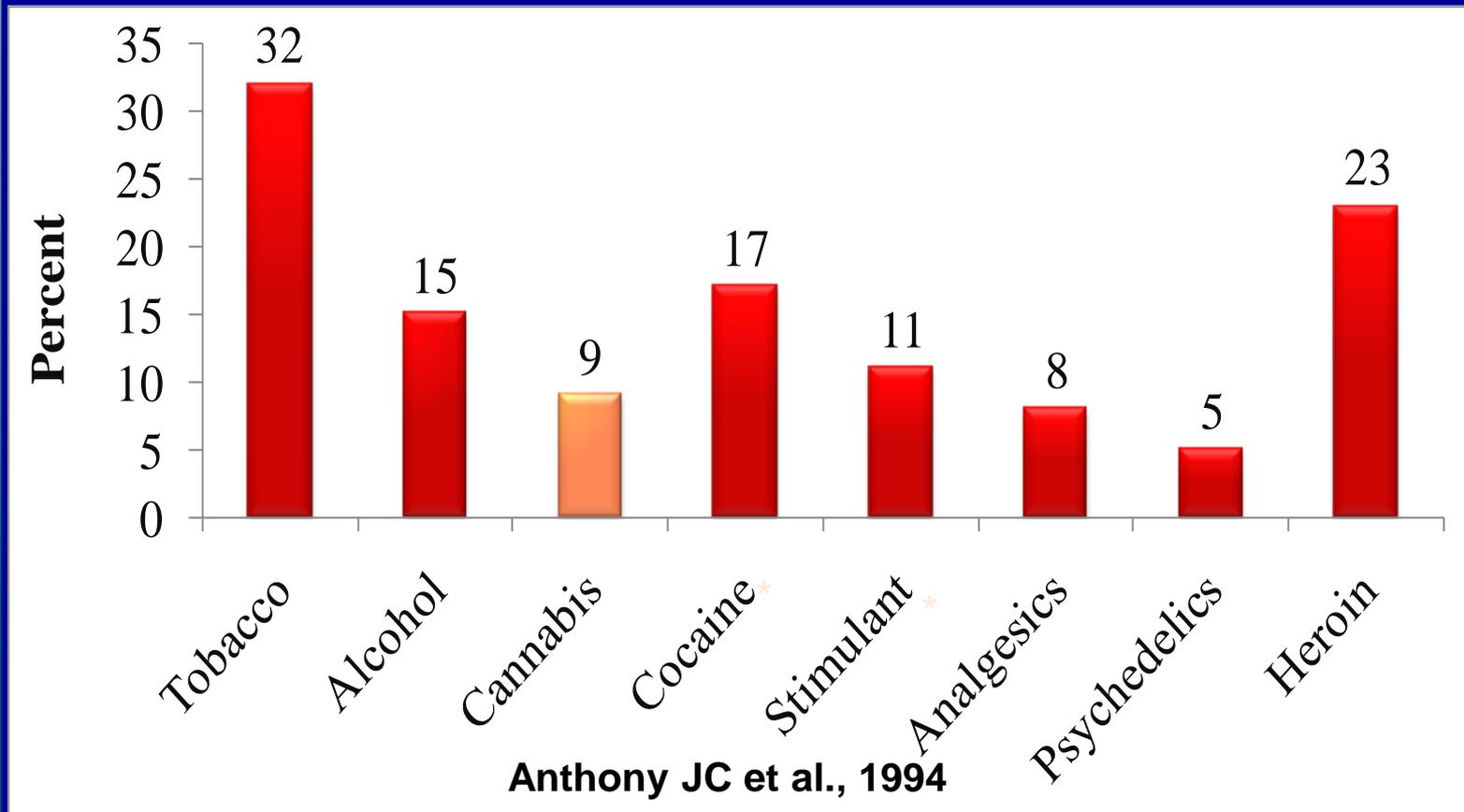| Drug	Numbers in Thousands
Marijuana	4299
Pain Relievers	1850
Cocaine	1120
Tranquilizers	481
Heroin	399
Stimulants	371
Hallucinogens	371
Inhalants	164
Sedatives	147

Numbers in Thousands

Development of Problems:
About 9% of users may become dependent; 1 in 6 who start use in adolescence;

Estimated Prevalence of Dependence Among Users

Anthony JC et al., 1994

Large Numbers, Disturbing Trend

- Between 1.6 and 2.3 million of the 14 million active users of marijuana in the United States meet DSM-IV criteria for marijuana dependence (Gfroerer et al. 2002, Chen et al. 1997).

- Marijuana use among teenagers continues to rise, while preception of risk falls (Monitoring the Future 2011).

Easy Access

- **Extremely potent (15-22% THC) marijuana available.**

- **Medical marijuana laws have created legitimate farms growing potent strains.**

- **November 2008- MA decriminalization of less than 1 ounce of marijuana.**

How many joints can be rolled from an ounce?

A. 10

B. 30

C. 50

D. 80

If you said "D", you are correct.

How much is an ounce?

Treatment Access and Utilization

- **Only 6% of those seeking substance abuse treatment sought treatment for cannabis dependence.**

- **No generally accepted treatments.**

- **No FDA-approved medications.**

Challenges and Opportunities

- Developing effective medications.

- Finding treatments that work will limit exposure to other harmful medications.

- Enhancing intensity of talk therapies may decrease the need for medications.

TREATMENT

What do you do?

- Never worry alone.

- McLean, primary care physician, school nurse.

What does treatment look like?

- Medical detox is not necessary.

- 30 days of "rehab" is unlikely.

- Get prospective patient to talk to somebody.

- Readiness/alliance work.

Ongoing treatment

- Talk Therapy- individual/group, different modalities.

- Family support.

- Medications in some cases.

Nabilone for Cannabis Dependence

- Possible agonist pharmacotherapy for cannabis dependence (not unlike methadone or buprenorphine for heroin and nicotine patch for tobacco).

- Funded by NIDA and Adam Corneel Young Investigator Fellowship.

- Clinicaltrials.gov NCT 01347762, IND granted by the FDA.

Nabilone for Cannabis Dependence

- 16 cannabis-dependent, treatment seeking 18-45 year-olds.

- 10 weeks of nabilone titrated to 1 mg twice daily or placebo.

- All participants receive medical management.

Final Thoughts

- Awareness– you are ahead of the game.

- Communication.

- Even if treatment is necessary, it can work.

khill@mclean.harvard.edu ,
617 855 4501

Linda Marucci, McLean
Treatment Coordinator 617
855 3505