

The Opioid Epidemic: A Public Health Crisis

Colleen T. LaBelle, BSN, RN-BC, CARN
Program Director STATE OBOT B
Boston University School of Medicine
Boston Medical Center

Public Health Nursing Webinar
July 28, 2015



Acknowledgements

- The New England Public Health Training Center
- Boston University School of Public Health
- Massachusetts Association of Public Health Nurses (MAPHN)



Accrediting Statements

- MAPHN will issue 1.2 nursing contact hours for this program in accordance with the regulations governing continuing education requirements for the Board of Registration in Nursing under Commonwealth of Massachusetts Regulations (CMR) 244 Section 5.0
- These contact hours will expire 30 days following the “Live” webinar session date



How to Obtain Nursing Continuing Education Credit

1. Please visit: www.maphn.org/webinars
2. Click on the "Evaluation Forms" link which will take you to the evaluation form in Survey Monkey
3. Fill out your evaluation in Survey Monkey and at the end there will be instructions to "click here" to get your CE certificate,
4. click to open and print your certificate FIRST
5. then submit your evaluation.

Questions please email: educationchair@maphn.org



Continuing Education Disclaimer

In compliance with continuing education requirements, all presenters must disclose any financial or other relationships (a) with the manufacturer(s) of commercial product(s) and/or of provider(s) of commercial services discussed in the educational presentation and (b) with any commercial supporters of the activity.

The presenter(s) wishes to disclose he/she has no financial interest or other relationship with the manufacturer(s) of commercial products, suppliers of commercial services, or commercial supporters. There is no commercial support.



Learning Objectives

- Discuss the history of addiction
- Describe the disease of addiction
- Recognize the difference between Opioid antagonists and agonists

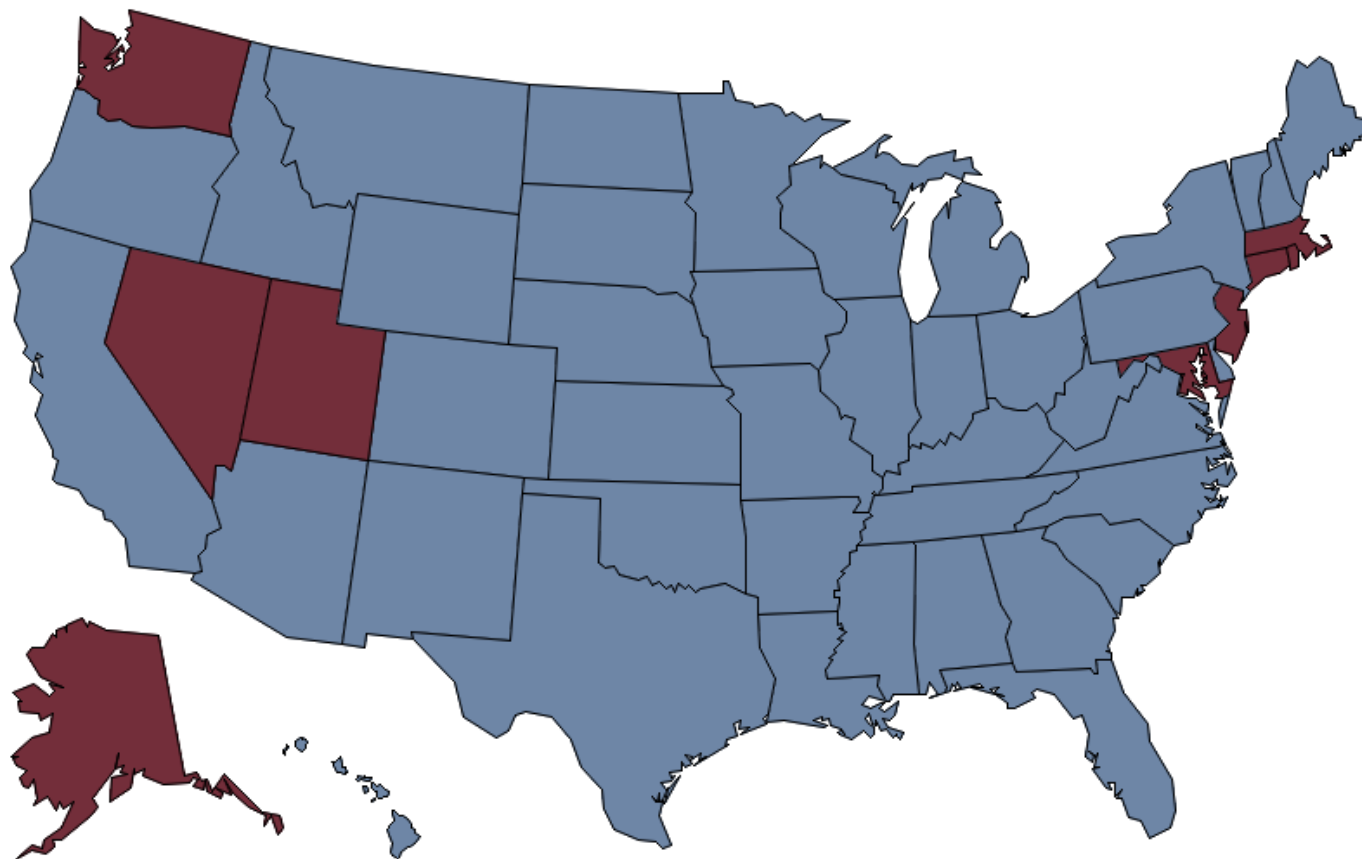



A close-up profile of a young child with dark hair, blowing into a pink bubble wand. Several clear bubbles with iridescent colors are floating in the air against a soft, out-of-focus green background.

When you were young
did you dream of being addicted?

Addiction is a disease. A disease that can be treated.

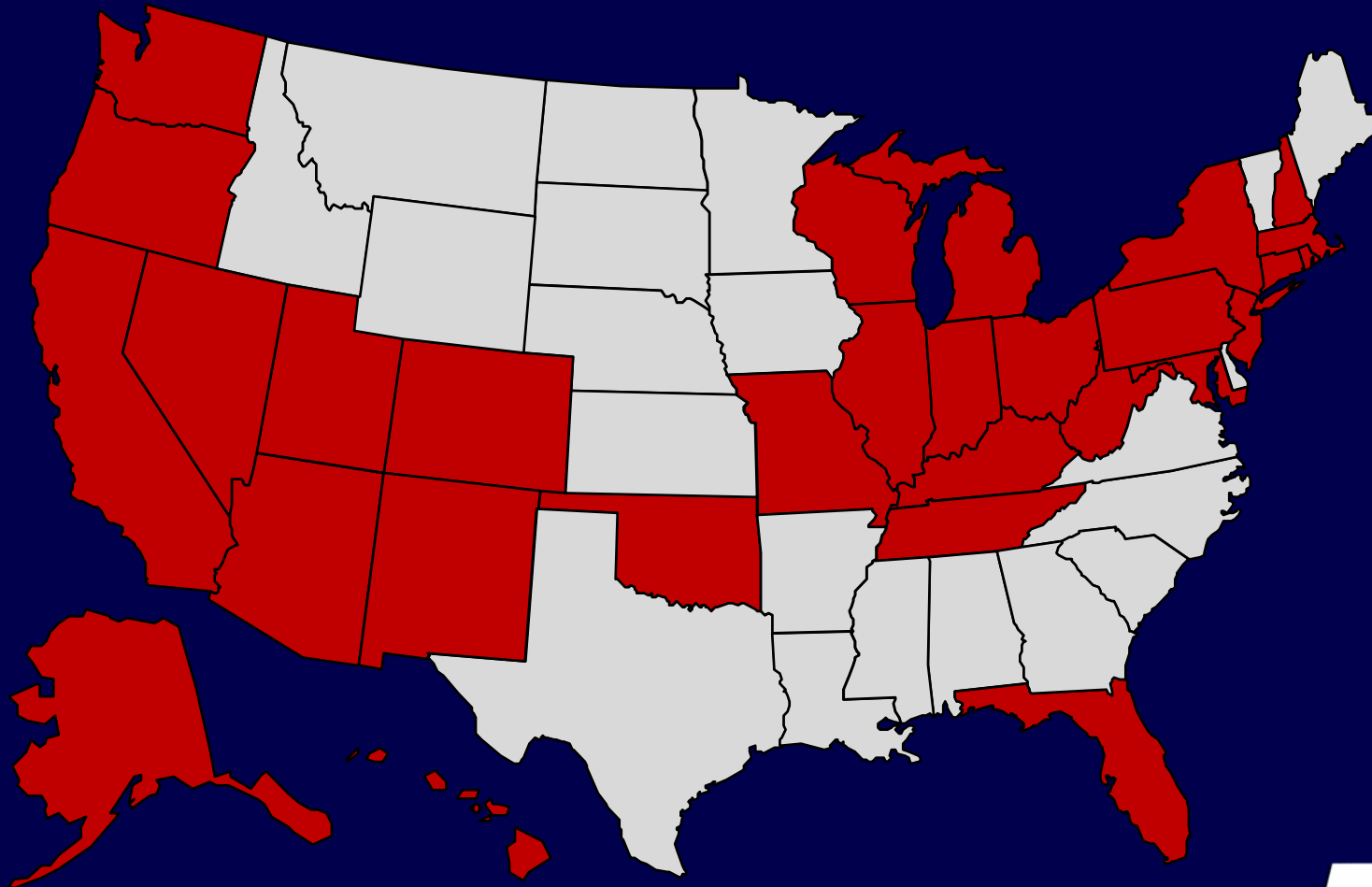
Drug overdose deaths outnumbered motor vehicle **traffic deaths in 10 states** in 2005



 More deaths from drug overdose

Drug Overdose Deaths Outnumber Motor Vehicle Traffic Deaths

31 States, 2010

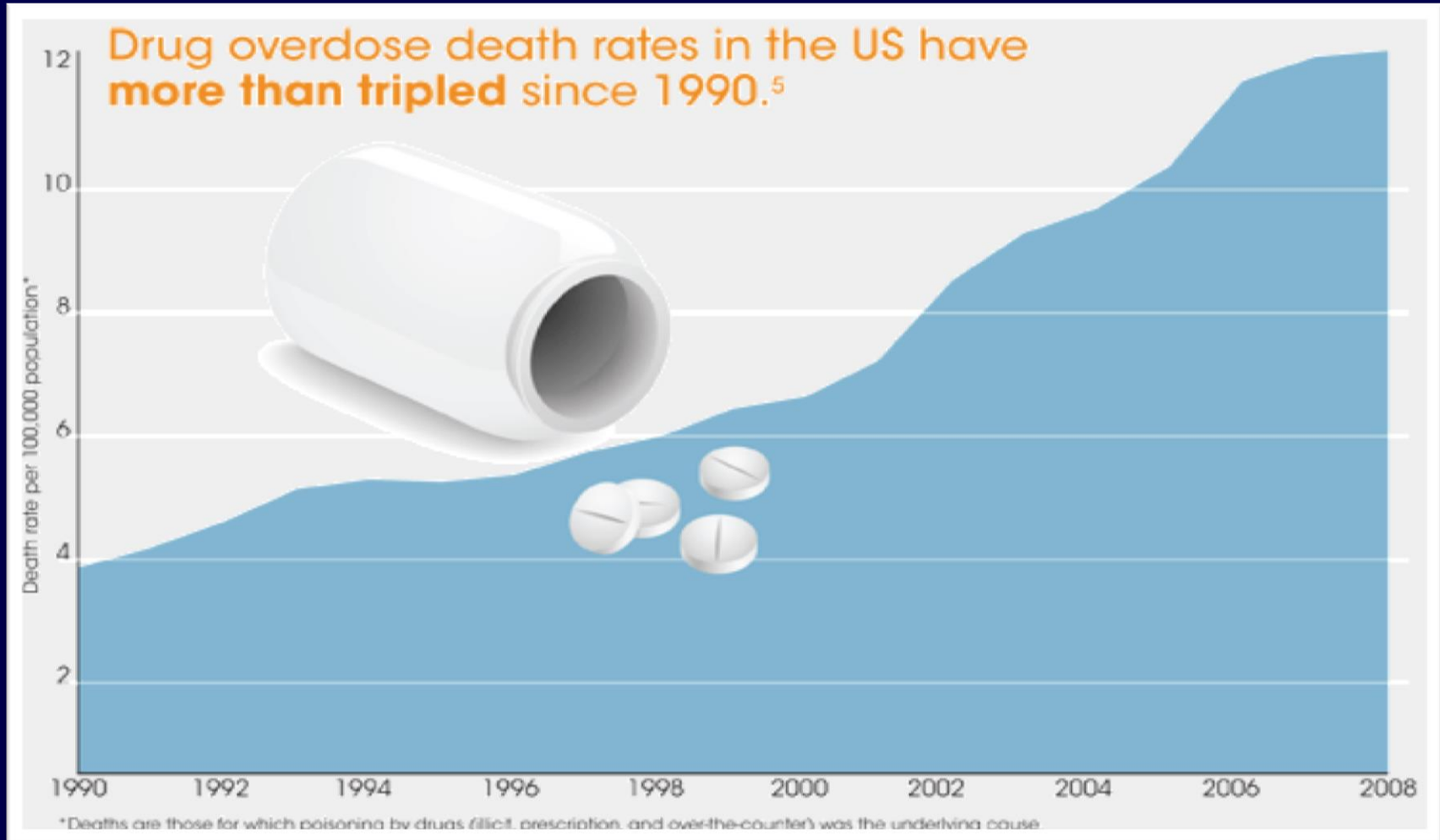


 More deaths from drug overdose

CDC National Vital Statistics System, Multiple Causes of Death. 2010



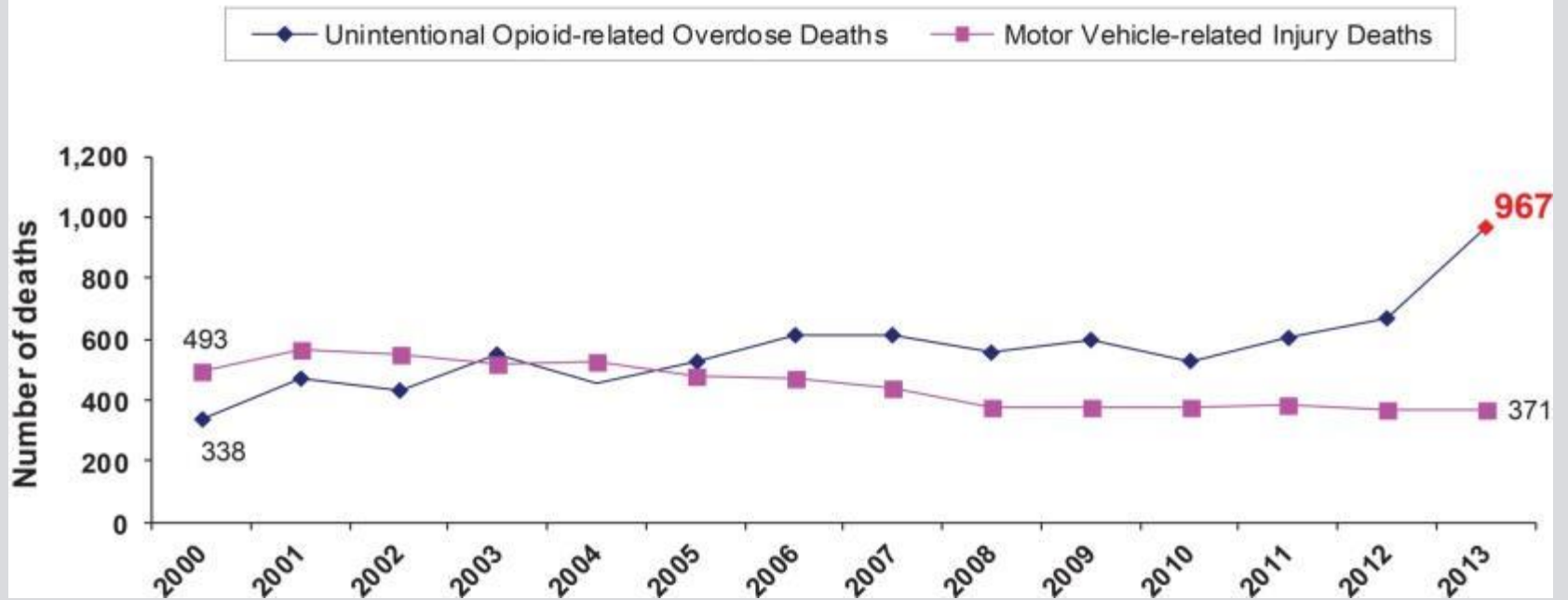
>120 people die from drug overdoses every day in the United States.



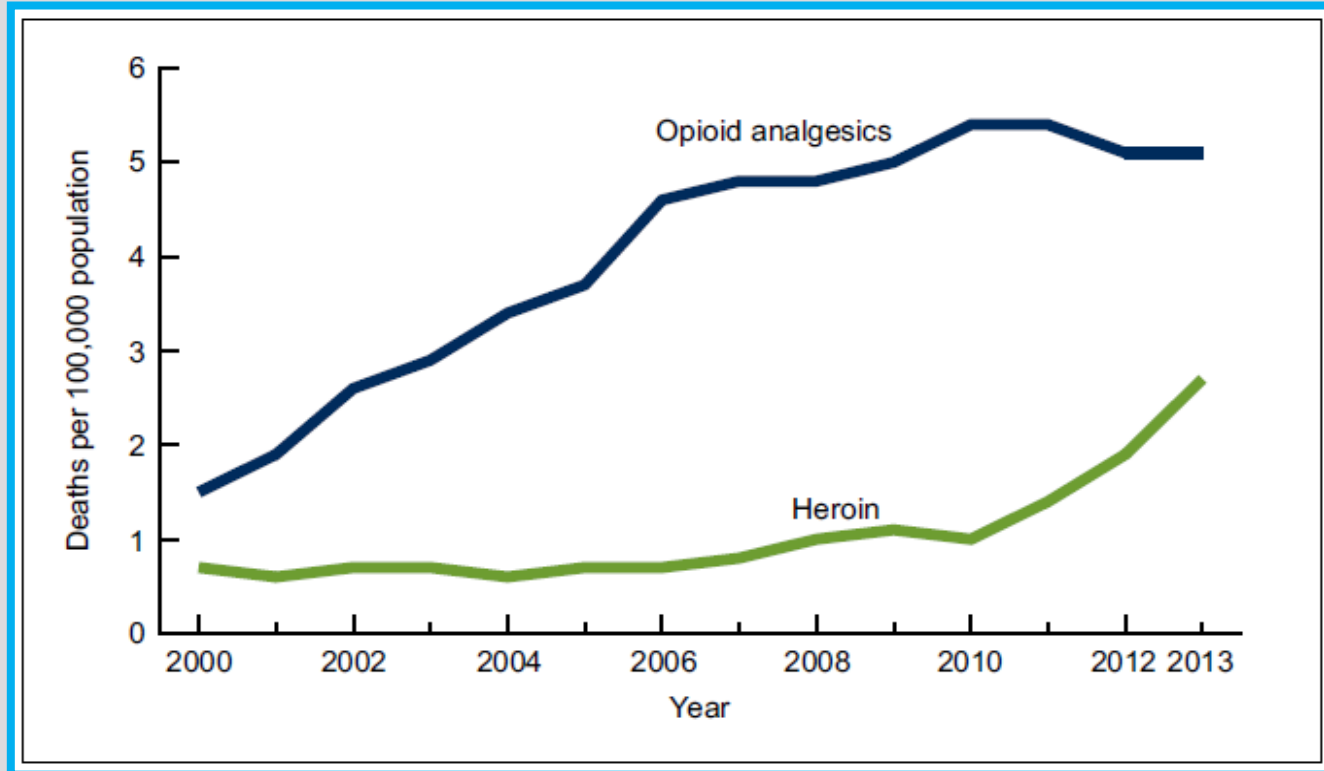
Every 12 minutes One person will die in the United States from an overdose..... CDC, October, 2014



Unintentional Opioid-related Overdose Deaths vs. Motor Vehicle-related Injury Deaths Massachusetts 2000-2013



Rates of overdose death from prescription painkillers & heroin in United States, 2000-2013



Finding 4: Opioid medications must be safely managed by prescribers, pharmacists, and patients

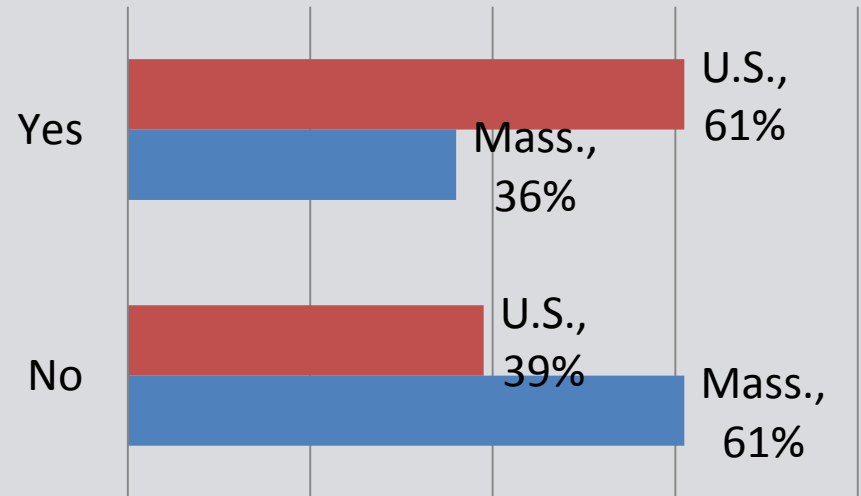
MASSACHUSETTS DOCTORS DISCUSS THE RISKS OF PRESCRIPTION PAINKILLERS WITH PATIENTS LESS THAN DOCTORS IN OTHER PARTS OF THE COUNTRY

In a 2015 survey, individuals who, in the past 2 years, **HAD** taken a strong prescription painkiller, such as Percocet, OxyContin, or Vicodin that was prescribed by a doctor for more than a few days, were asked the following question:

“Before or while you were taking these strong prescription painkillers, did you and your doctor talk about the risk of prescription painkiller addiction, or haven’t you talked about that?”

Only 36% of Massachusetts residents said “yes”, compared to 61% nationally

Did your doctor discuss the risks of addiction with you?



Source: Boston Globe and Harvard T.H. Chan School of Public Health, Prescription Painkiller Abuse: Attitudes among Adults in Massachusetts and the United States

Tools needed to reduce opioid deaths in the Commonwealth

Prevention

- School based prevention education
- Parent education about signs of addiction
- Community coalition initiatives
- Local drug-free school initiatives
- Prescriber and patient education
- Drug take-back programs
- Public awareness

Treatment

- Continuum of treatment from acute inpatient services to outpatient services
- Civil commitment: court-ordered SUD treatment
- Medication assisted treatment
- Outpatient counseling
- Emergency services
- Central database of treatment resources

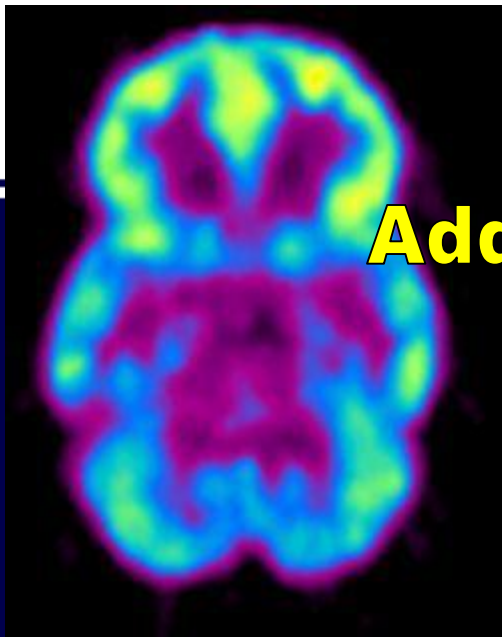


Intervention

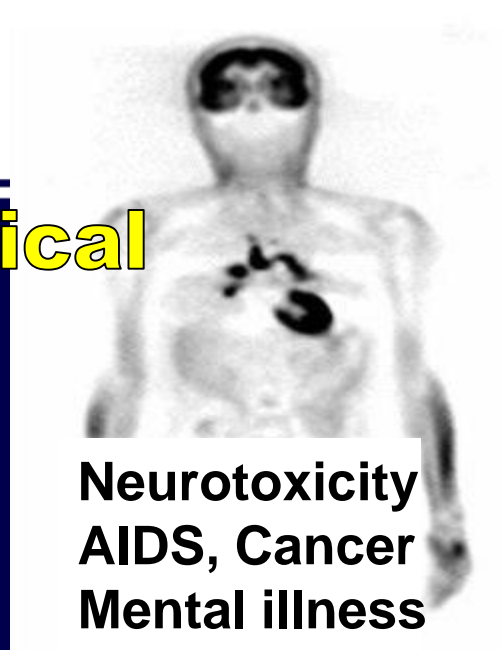
- Evidence-based screening for risk behaviors and appropriate intervention methods
- Prescription monitoring program
- Civil commitment
- Utilization of data to identify hot spots
- Access to naloxone
- Recovery coaches in Emergency Departments

Recovery Support

- Residential rehabilitation programs
- Alcohol and drug free housing
- Family and peer support
- Recovery high schools
- Resource navigators and case management



Addiction



Medical

**Neurotoxicity
AIDS, Cancer
Mental illness**

DRUGS



Social

**Homelessness
Crime
Violence**



Economic

**Health care
Productivity
Accidents**

Opiates and Opioids



Highly refined Southwest Asian heroin or Southeast Asian heroin



OPIATES are present in opium

- e.g. morphine, codeine, thebaine

OPIOIDS are manufactured as

- Semisynthetics
Derived from an opiate
 - e.g. heroin from morphine
 - e.g. buprenorphine from thebaine
- Synthetics
Completely synthesized to have function similar to natural opiates
 - e.g. methadone

Historical Context

- **Early 1900s:** Morphine clinics for opiate addicts
- **1914:** Congress adopts Harrison Narcotic Act
- **1920:** AMA condemns prescribing opioids to addicts
- **1923:** Last morphine clinic closed
- **1935:** Civil commitment to USPHS Narcotic Hospitals
 - Lexington, Kentucky and Fort Worth, Texas
 - Detoxification with > 90% relapse rates
- **1960s:** Medication maintenance treatment research
- **1970s:** Methadone Maintenance





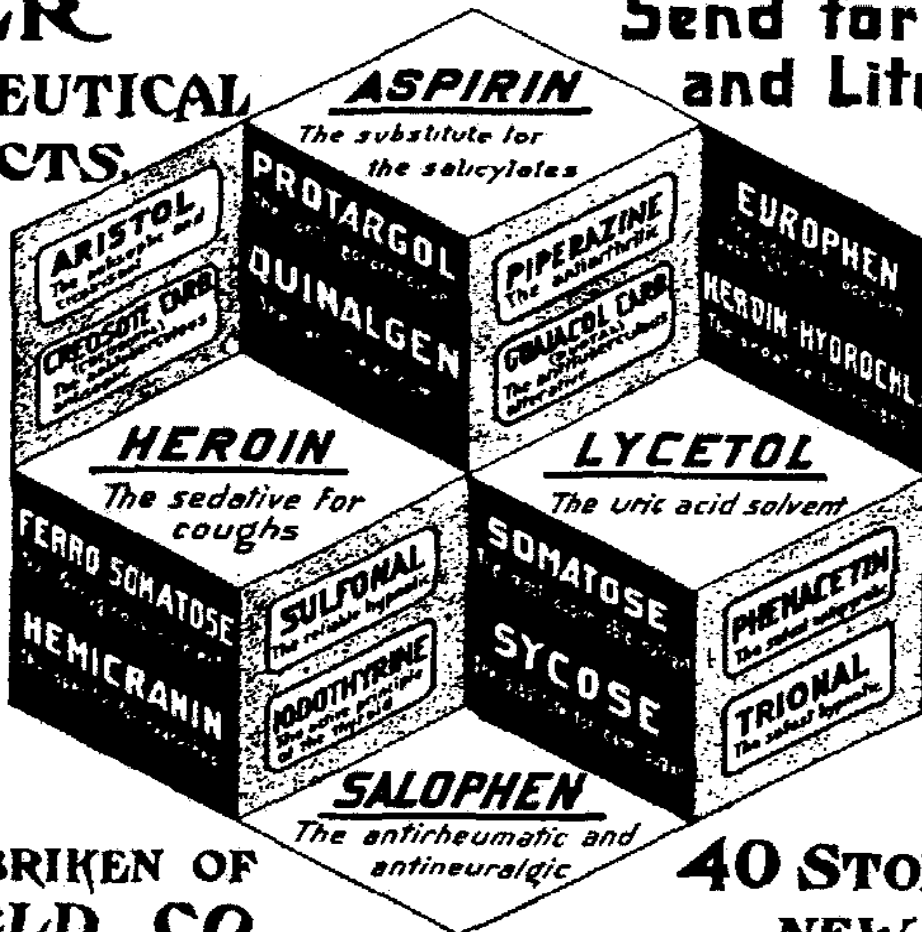
Mrs Winslow's Soothing Syrup (w/ Morphine)

Trading Card / Ad (1885-1890), Erowid.org Archive

Bayer Heroin 1898

BAYER
PHARMACEUTICAL
PRODUCTS

Send for samples
and Literature to

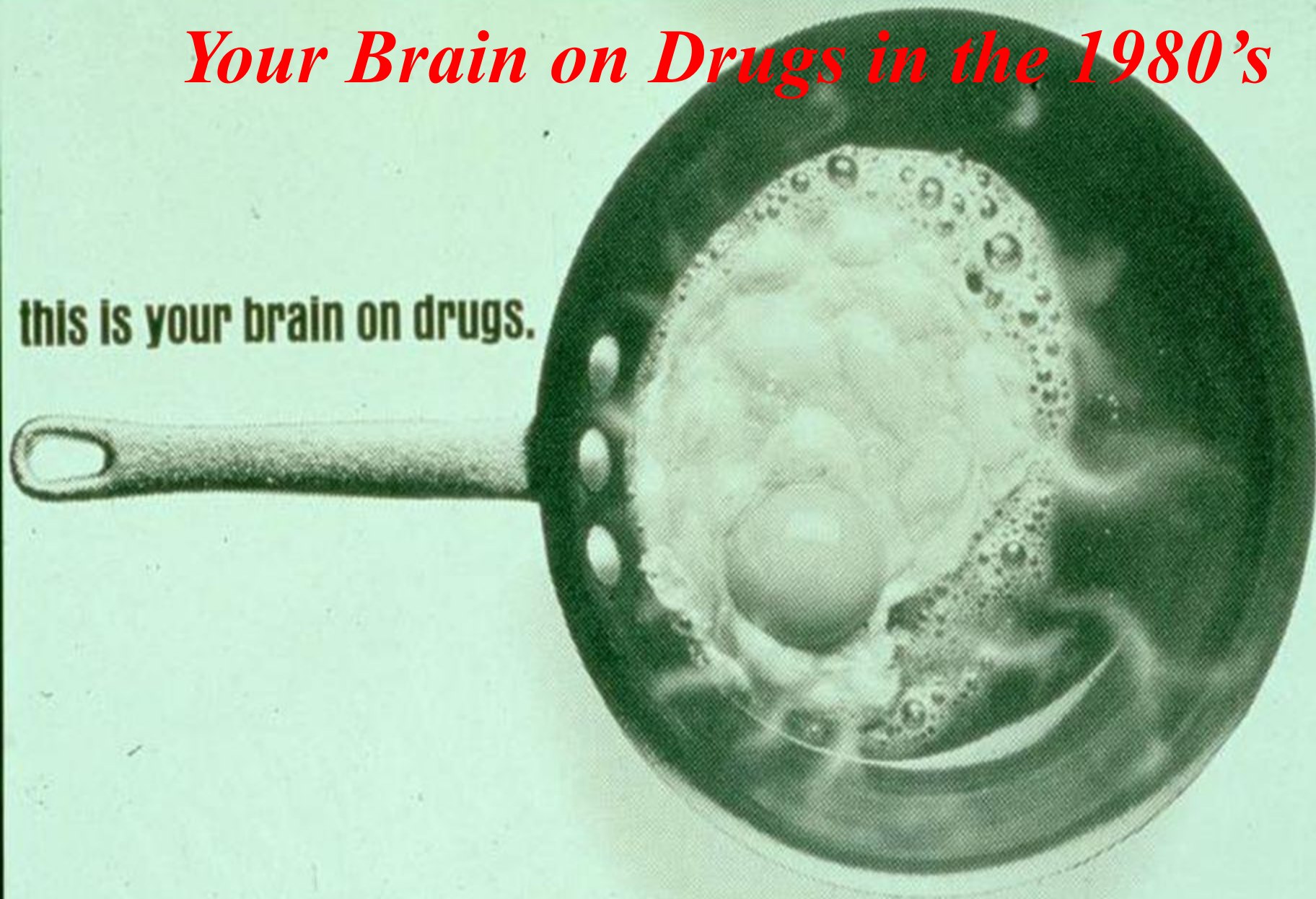


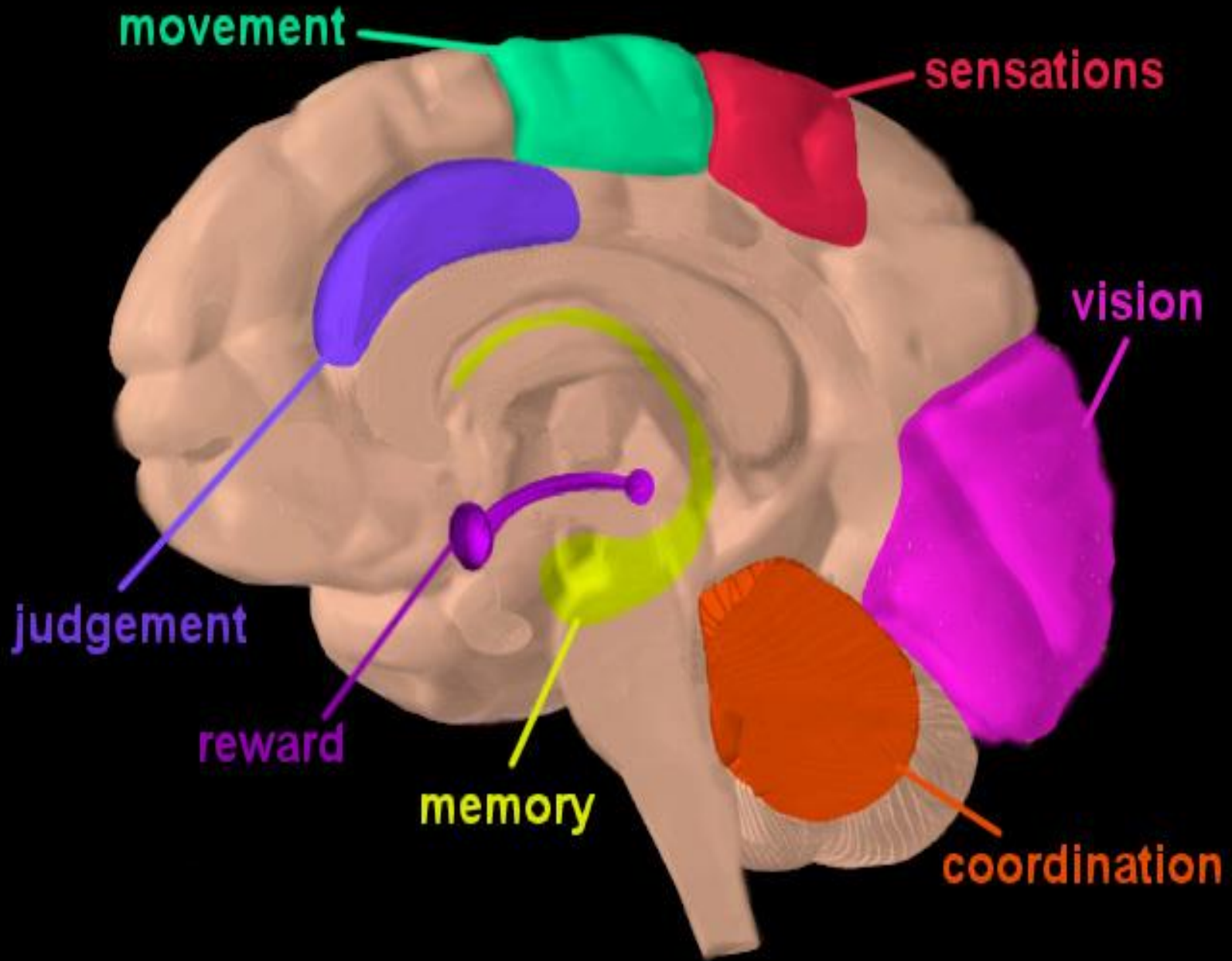
**FARBENFABRIKEN OF
ELBERFELD CO.**

**40 STONE STREET,
NEW YORK.**

Your Brain on Drugs in the 1980's

this is your brain on drugs.



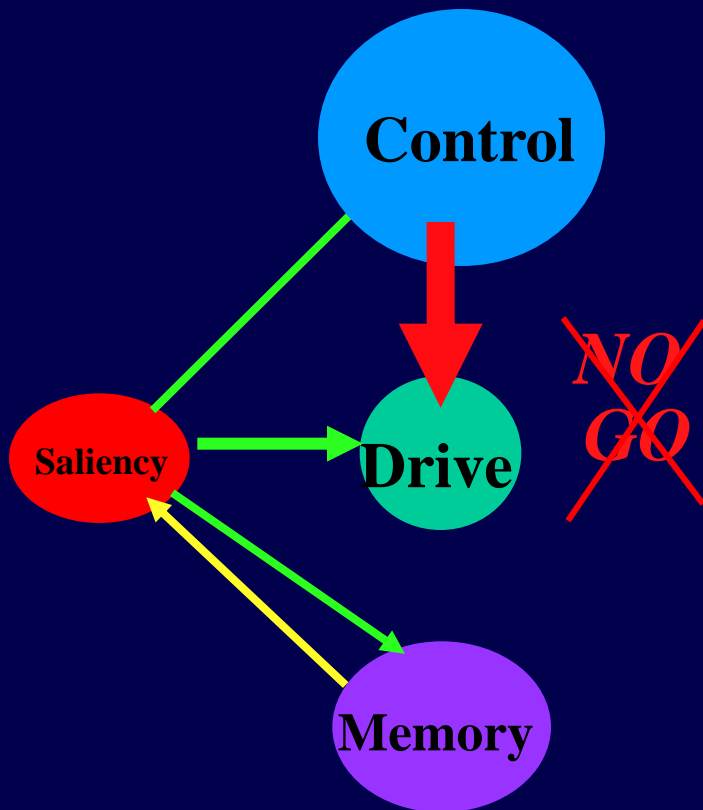


Addiction: the disease

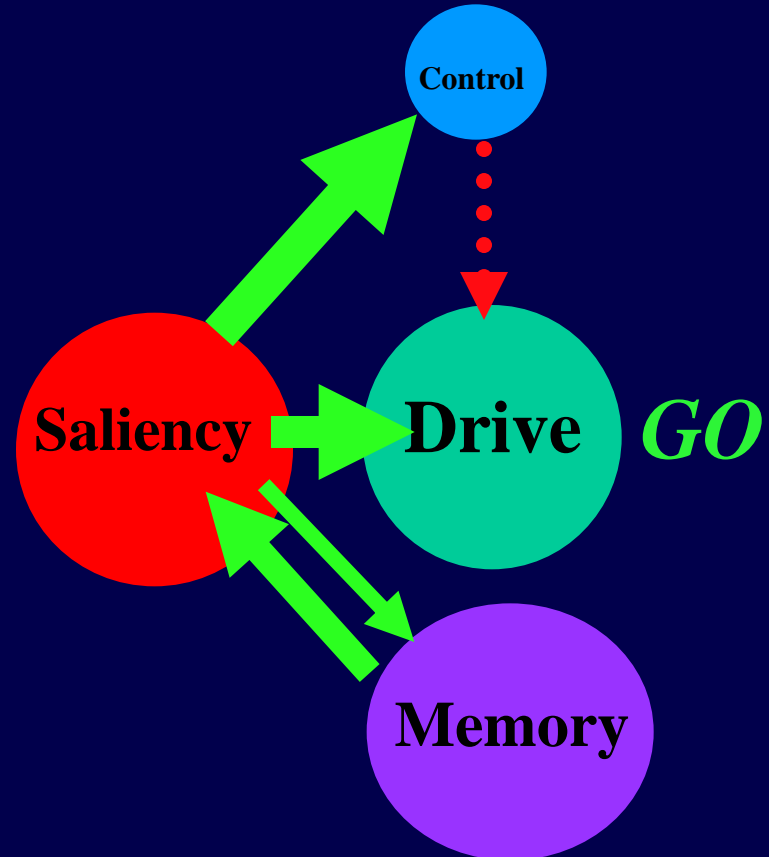
- **1956:** American Medical Association
- The illness can be *described*
- The course of the illness is *predictable* and *progressive*
- The disease is *primary* – that is, it is not just a symptom of some other underlying disorder
- It is *permanent*
- It is *terminal*: If left untreated, can lead to morbidity and mortality

Why Can't Addicts Just Quit?

Non-Addicted Brain



Addicted Brain



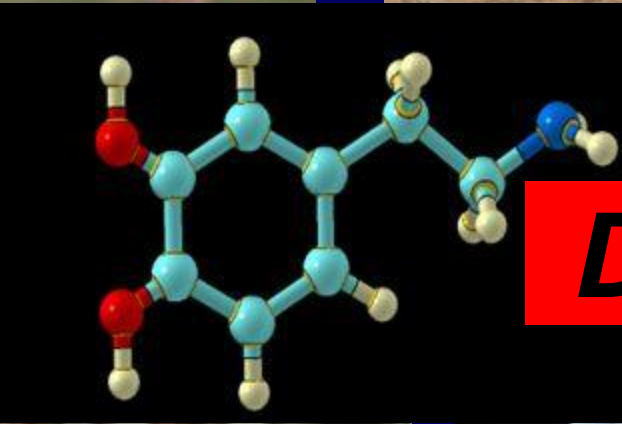
Because Addiction Changes Brain Circuits



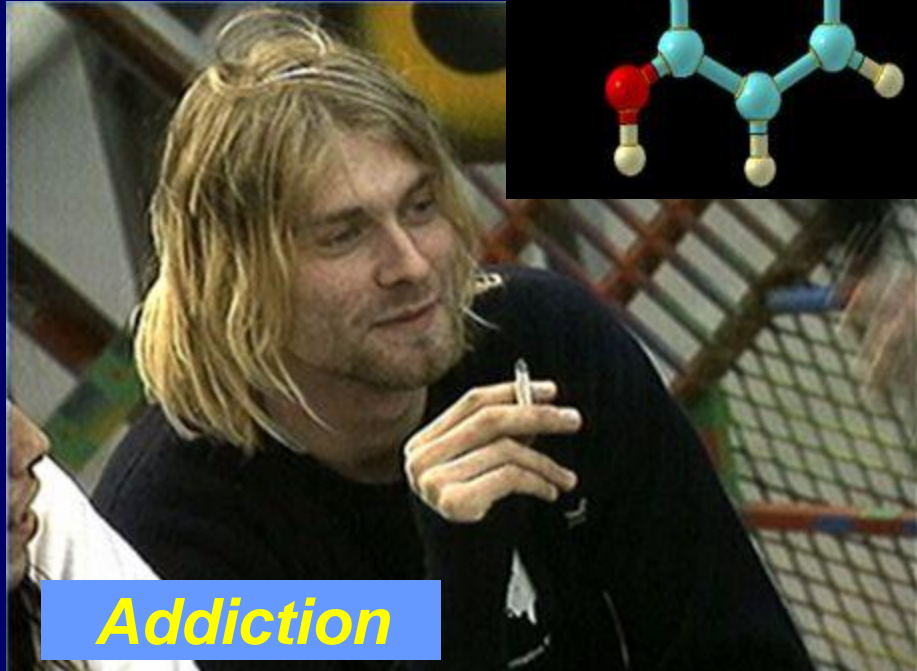
Movement



Motivation



Dopamine

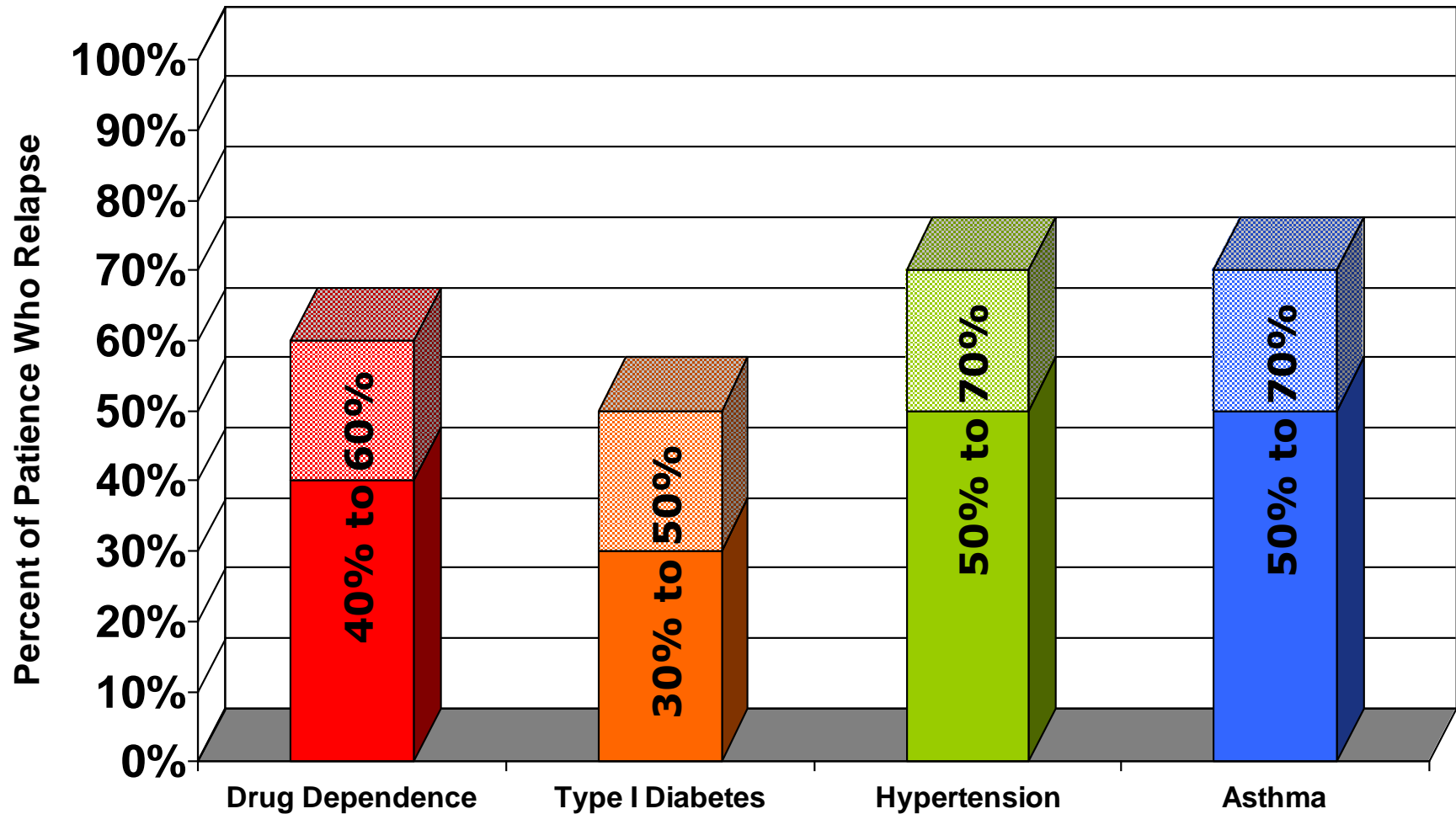


Addiction



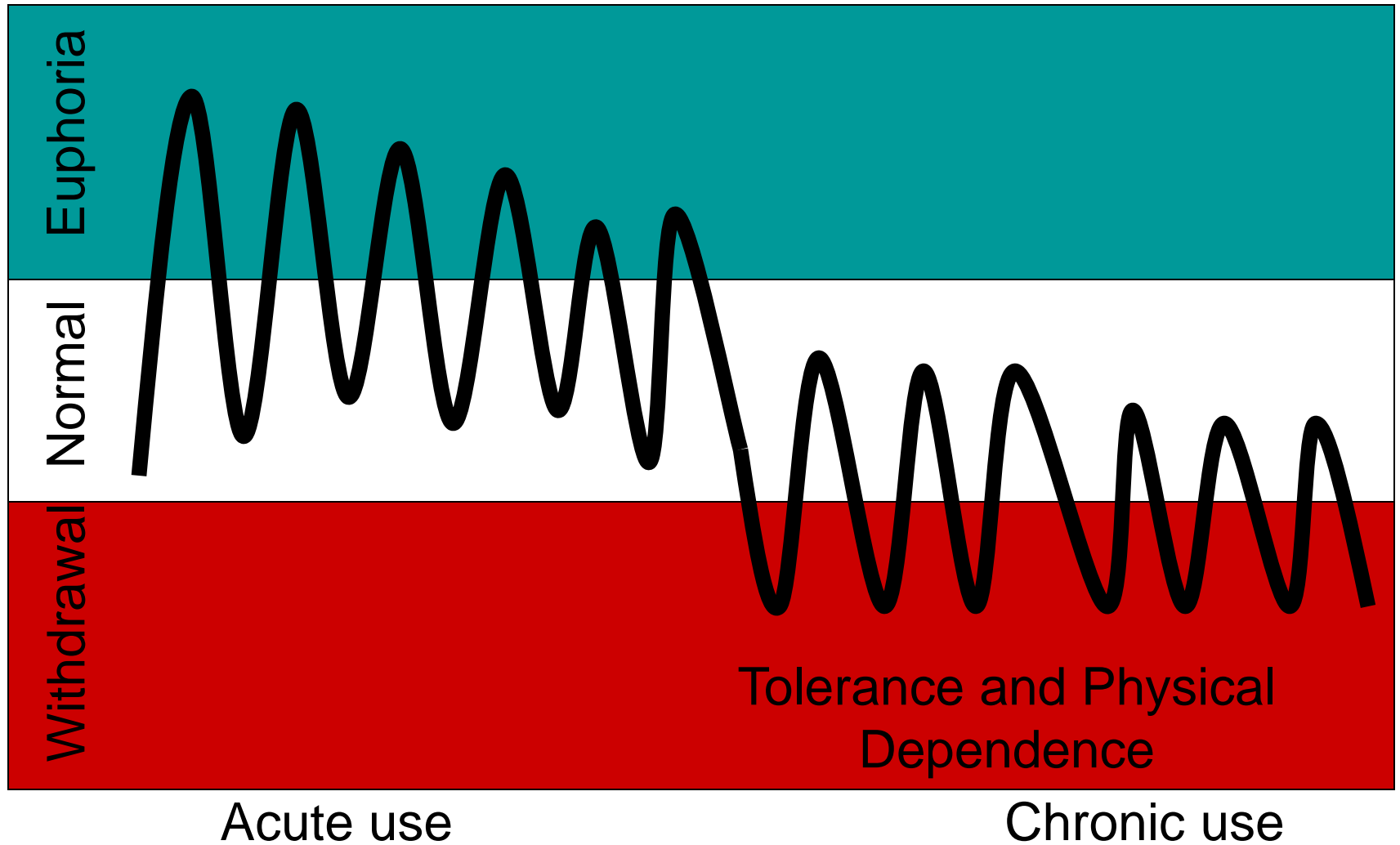
Reward & well-being

Treatment Non Compliance Rates Are Similar for Drug Dependence and Other Chronic Illnesses

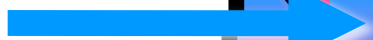


Source: McLellan, A.T. et al., JAMA, Vol 284(13), October 4, 2000.

Acute to chronic opioid use



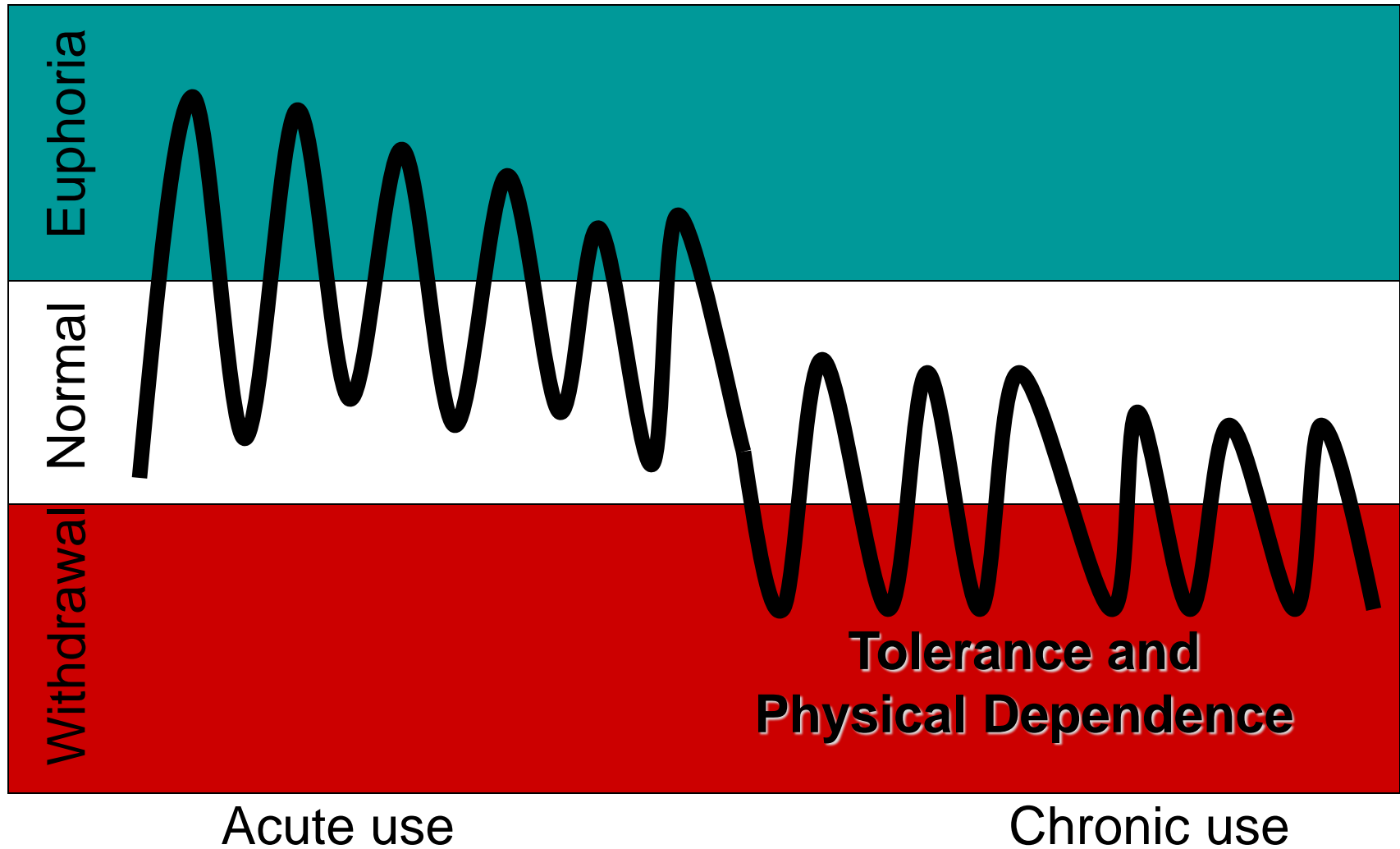
**Voluntary
Drug Use**



**Compulsive
Drug Use
(Addiction)**



Natural History of Opioid Dependence



Opioid Withdrawal Syndrome

Protracted Symptoms

- Deep muscle aches and pains
- Insomnia, disturbed sleep
- Poor appetite
- Reduced libido, impotence, anorgasmia
- Depressed mood, anhedonia
- Drug craving and obsession

What Is Adolescence ?



Harder to think ahead about Consequences



Less able to inhibit impulses coming out of other parts of the brain.....

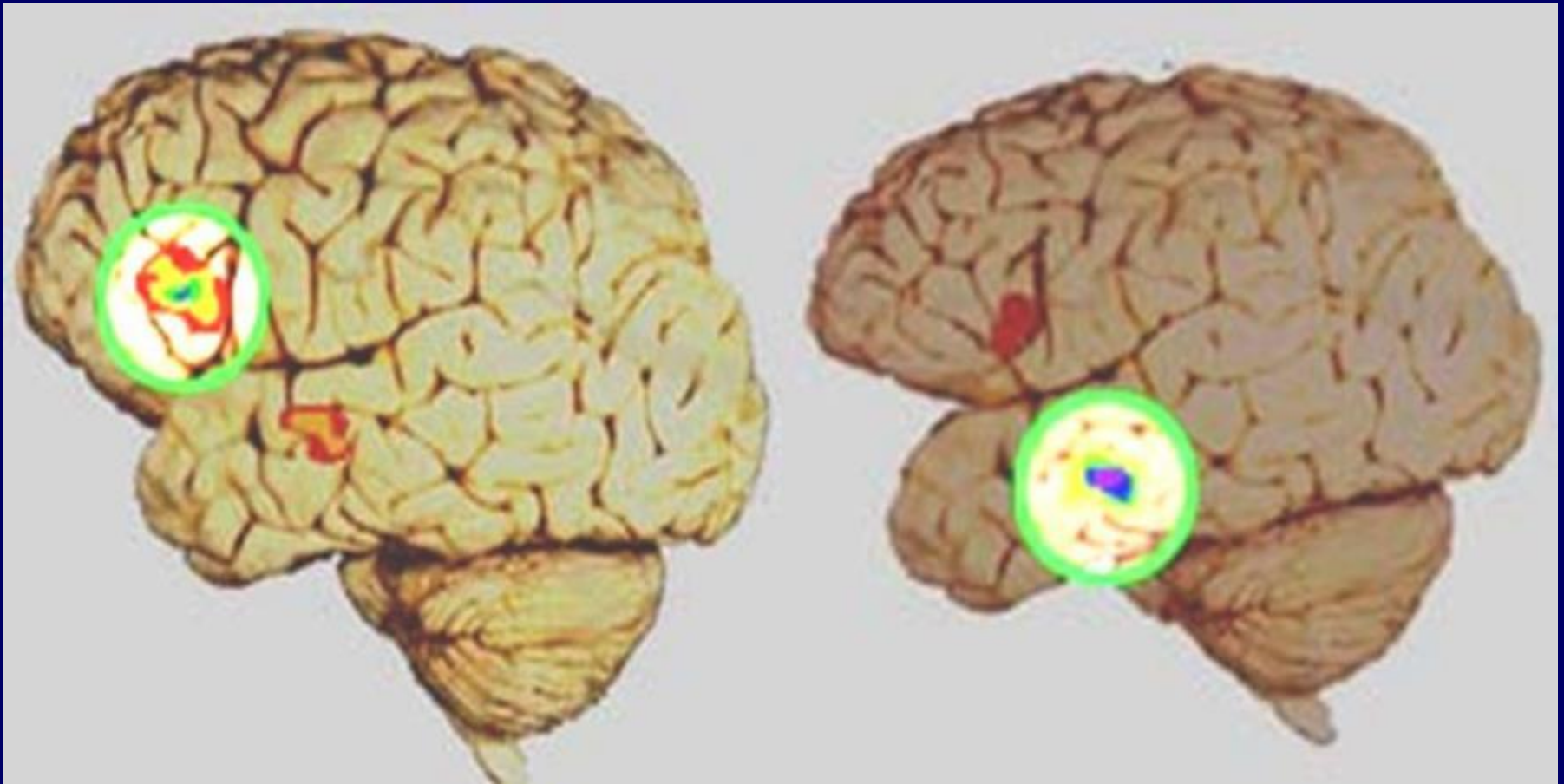


Impulse

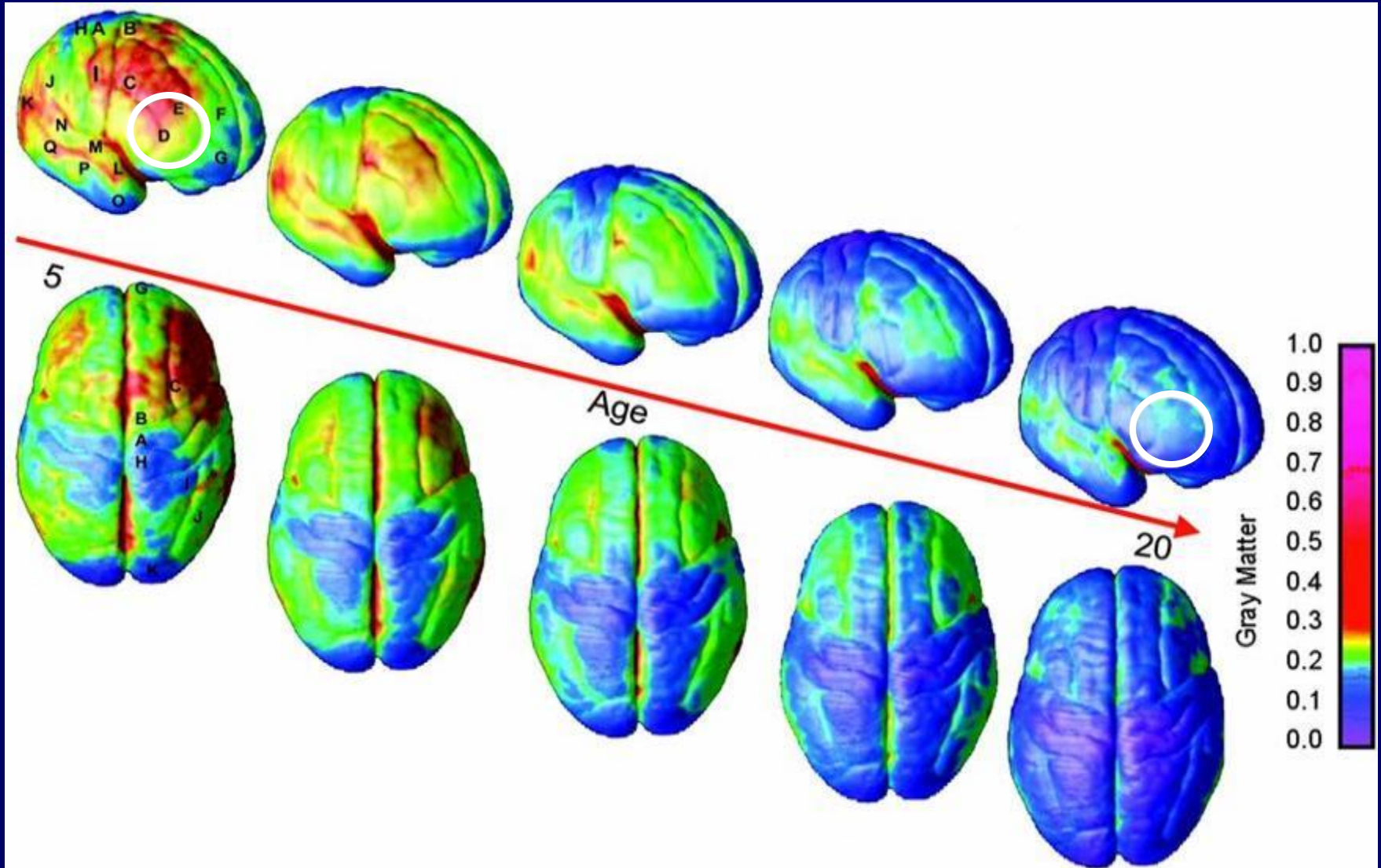
Control

When Reading Emotion...

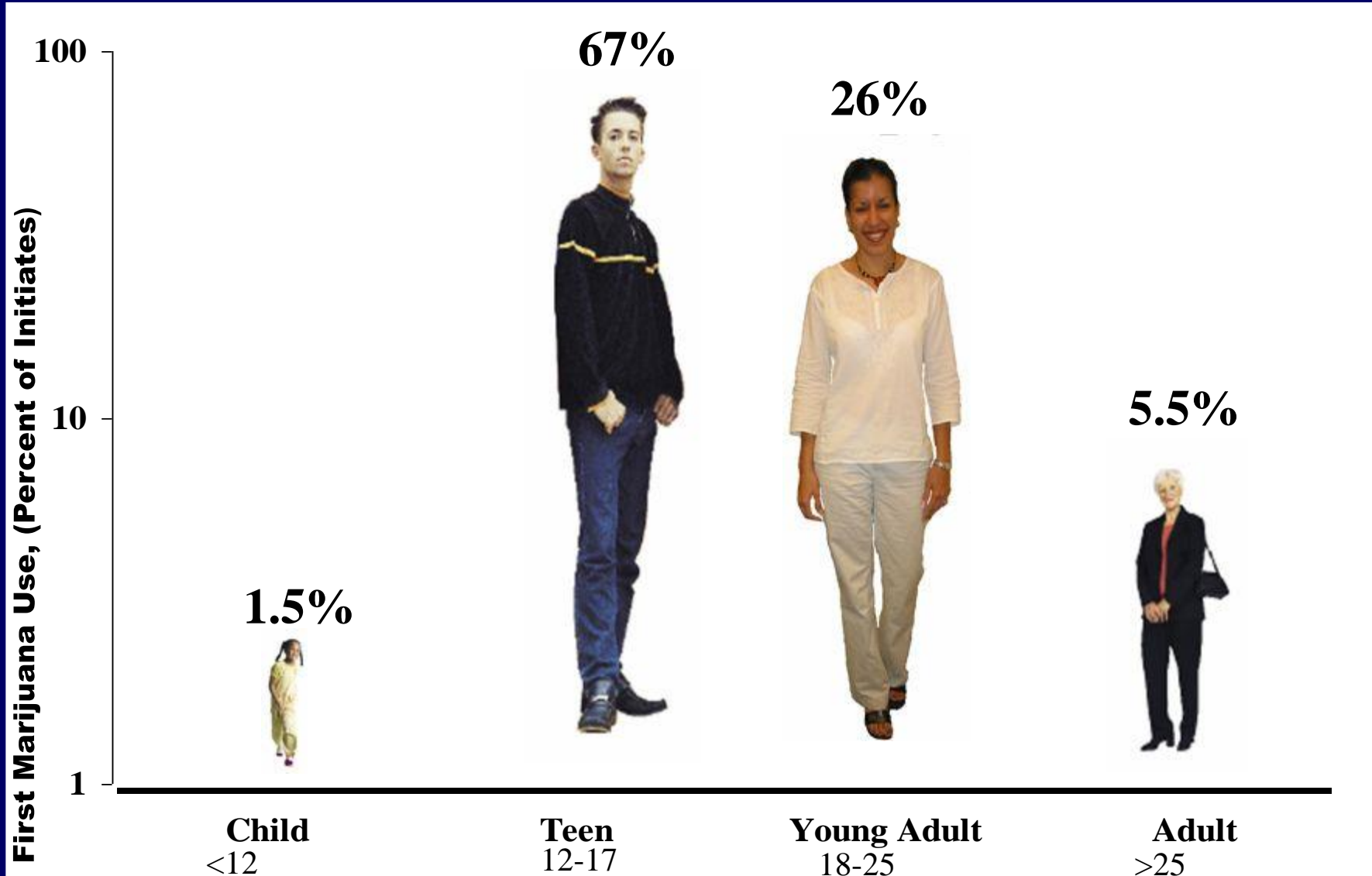
**Adults Rely More on the Frontal Cortex
While Teens Rely More on the Amygdala**



MRI Scans of Healthy Children and Teens Over Time

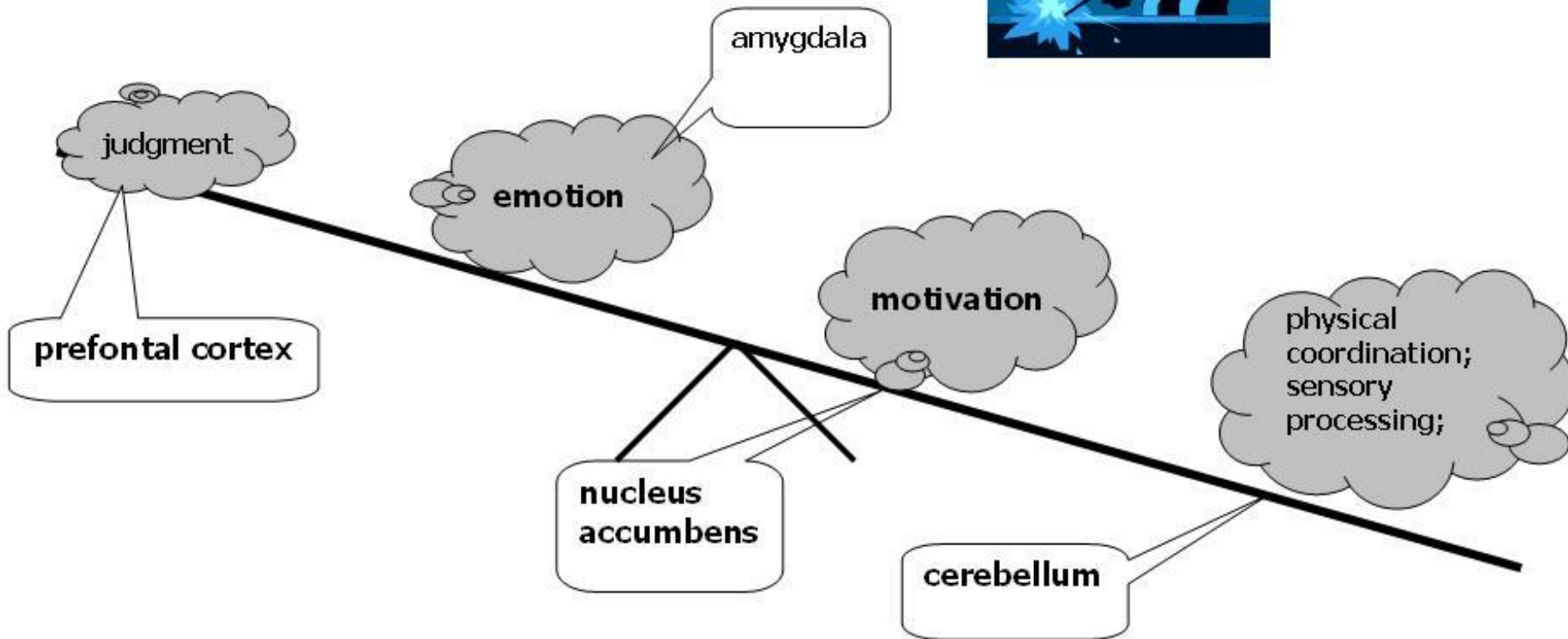


Addiction is a Developmental Disease: It Starts Early



Brain Development

Pruning occurs in stages, from back of the brain to the front



The Adolescent Brain

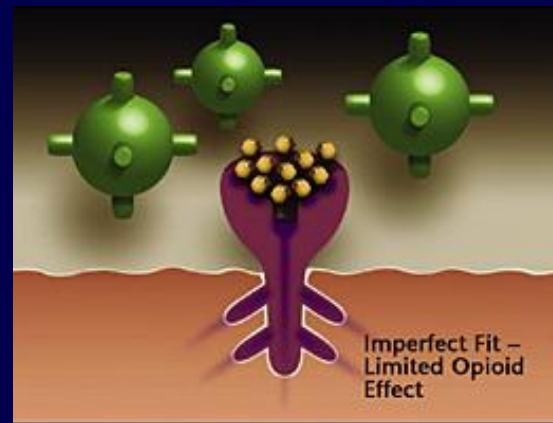
- Substance use is particularly damaging during adolescence.
- Brain maturation may not be complete until age 24 or beyond
- Neurological changes caused by some substances appear to be irreversible.
- Substance-abusing teens may never achieve their full intellectual potential.

Mu Opioid Receptor Pharmacodynamics



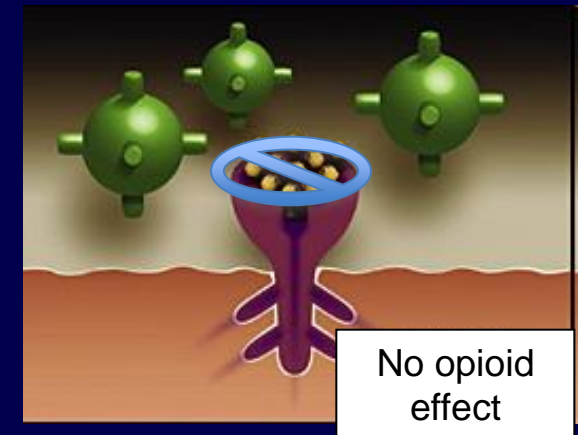
Full MU Agonist:

Methadone
Heroin
Morphine
Oxycodone



Partial MU Agonist:

Buprenorphine



Full MU Antagonist:

Naltrexone
Naloxone

Function at Receptors: Antagonists

**Mu
receptor**

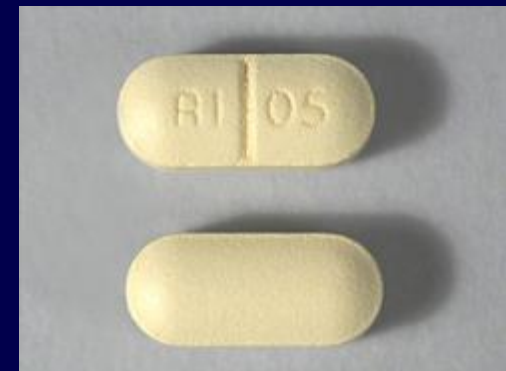
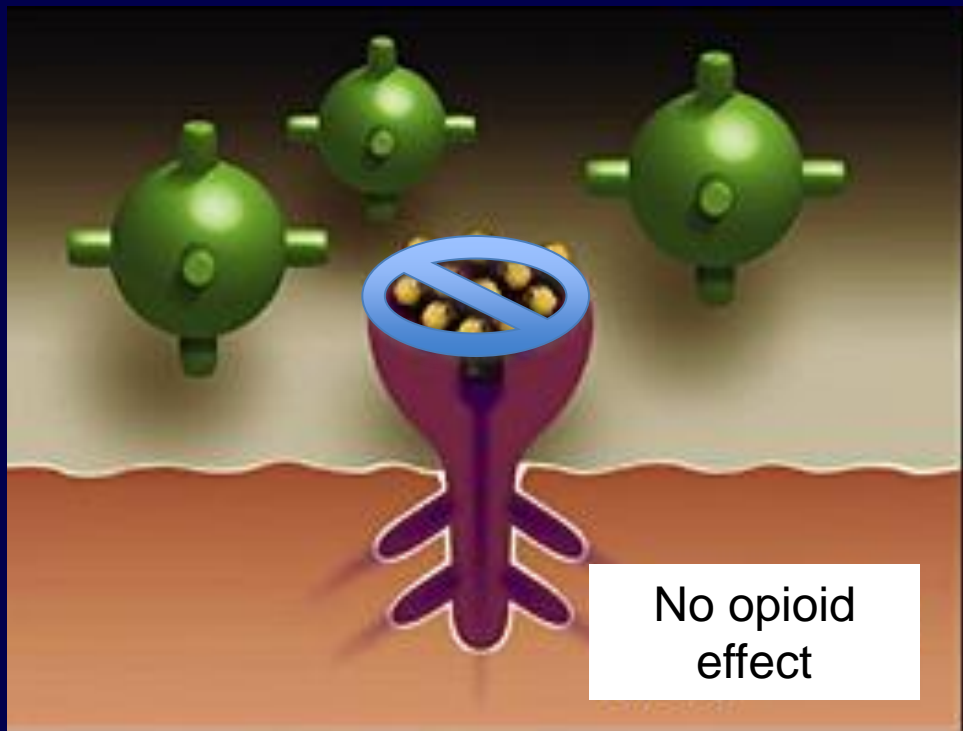
A diagram consisting of a blue arrow pointing left, labeled 'Mu receptor'. To its right is a white rectangular box with a blue border, labeled 'Antagonist binding ...'. A blue line connects the tip of the arrow to the left side of the box.

Antagonist binding ...

- occupies without activating
- is not reinforcing
- blocks abused agonist opioid types
- includes naloxone and naltrexone

Naltrexone for Opioid: Dependence

- Full MU opioid receptor ANTAGONIST



Naltrexone

- Pure opioid antagonist with good oral absorption
- Duration of action 24-48 hours
- 1984: FDA approved to treat opioid dependence
- Well tolerated and safe

Naltrexone

- Low interest among “street addicts”
- No better than placebo except in highly motivated patients
- Impaired physicians > 80% abstinence at 18 months

Vivitrol

- FDA approved October 2010
 - Opioid Dependence
 - Injectable
 - 30 days duration
 - Office setting: all prescribers can prescribe
 - Concern for pain management: acute, chronic
 - Need to be opioid naive prior to start: prevent precipitated withdrawal

Naltrexone Injectable Suspension

- Naltrexone extended-release injectable suspension for intramuscular administration (Vivitrol®)
 - Indicated for the prevention of relapse to opioid dependence following opioid detoxification
 - 380mg once monthly
 - Refrigerate
 - Should be administered by a health care professional
 - Alternate buttocks with each injection



Function at Receptors

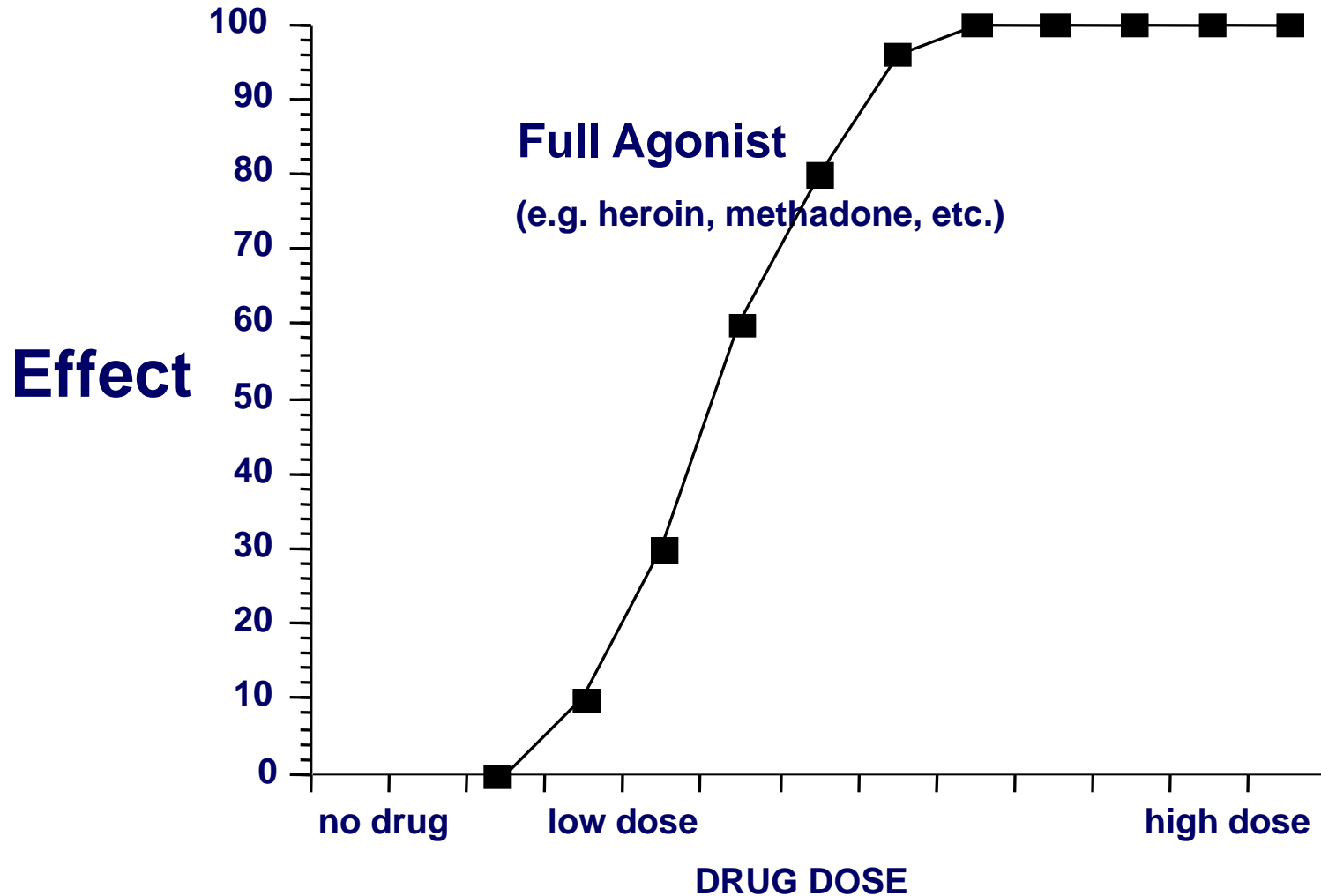
Full Agonists

**Mu
receptor**

Full agonist binding ...

- activates the mu receptor
- is highly reinforcing
- is the most abused opioid type
- includes heroin, methadone, & others

Full Agonist Activity Levels



Methadone Maintenance

- Evidence-based treatment using the medical model
- Includes interdisciplinary care, mandated counseling
- Includes behavioral interventions, testing
- Includes diversion control plans



Methadone Hydrochloride

- Full opioid agonist available in tablets, oral solution
- PO onset of action 30-60 minutes
- Duration of action
 - 24-36 hours to prevent opioid withdrawal and craving and block effects of illicit opioid use
 - 6-8 hours analgesia



Dosing of Traditional Medications

- **Methadone**

- The dose is increased until opioid craving, illicit opioid use, and withdrawal symptoms have abated, or, until excessive side-effects (i.e., sedation, constipation, etc.) require a reduction in dose

Stigma and Misinformation

**BOSTON
Herald**

WEDNESDAY, SEPTEMBER 7, 2005 ■ 50 CENTS (75 CENTS 30 MILES OUTSIDE BOSTON)

**ELEGANT
FASHIONS**
SEE PAGE 36



9/7/2005

Truckers punch in at drug clinic before work

BIG DIG



IN A FIX: A line forms early in the morning outside a detox center on Topeka Street in Boston, where numerous Big Dig workers go to get a daily methadone dose.

HERALD EXCLUSIVE: PAGE 2

JUNKIES

GETTING OUT:
A U.S. Navy search and rescue swimmer comforts a victim of Hurricane Katrina pulled from a rooftop in New Orleans as they fly to safety aboard a Navy helicopter yesterday.



KATRINA COVERAGE: PAGES 4-6, 25

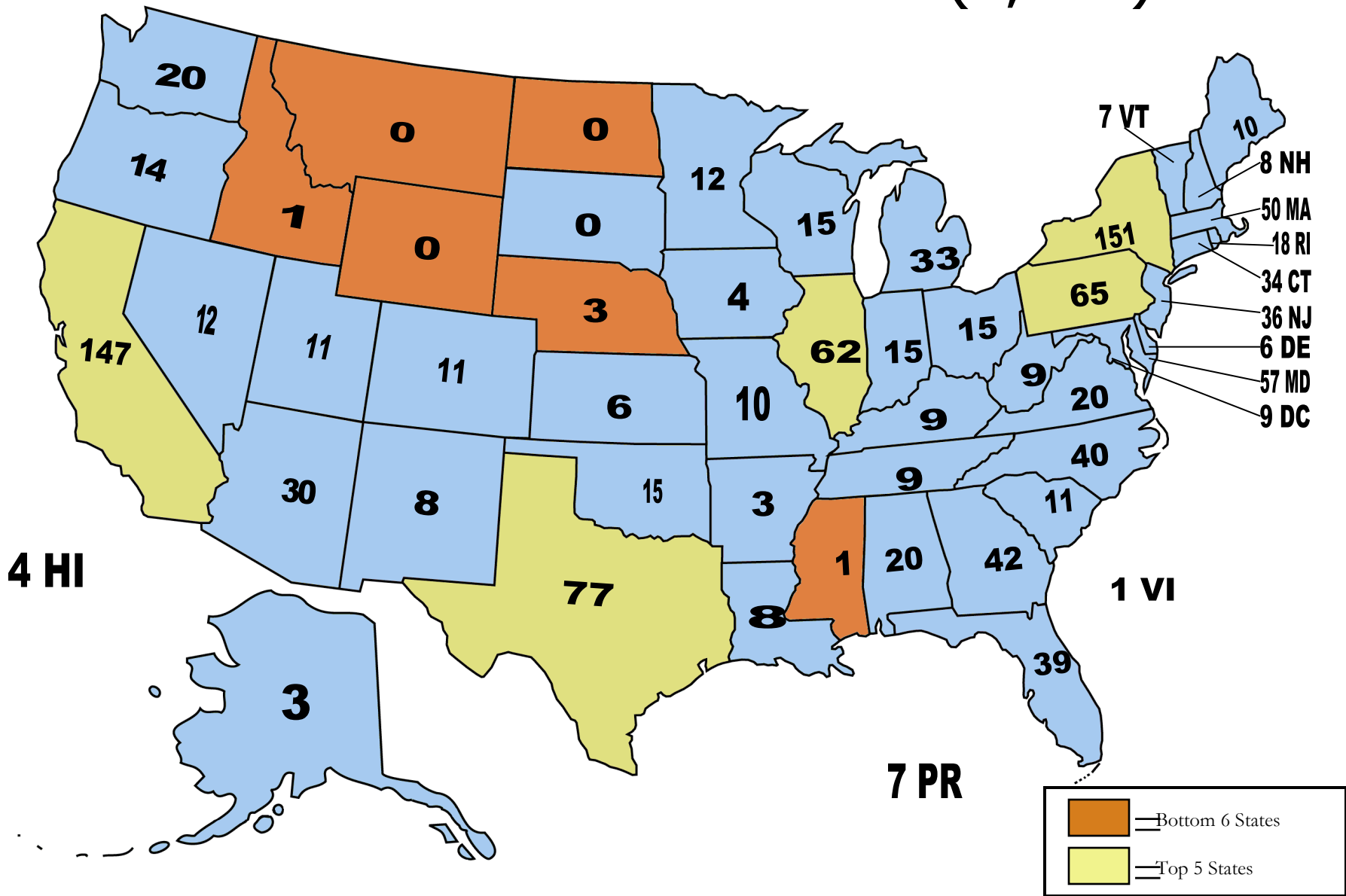
Cape refugee plans on hold

Medication Maintenance Goals

- Alleviate physical withdrawal
- “Narcotic blockade”
- Alleviate drug craving
- Normalized deranged brain changes
- Normalized deranged physiology



Active Opioid Treatment Programs by State as of June 2009 (1,200)



A Need for Alternative Options

- Move outside traditional structure to:
 - Attract more patients into treatment
 - Expand access to treatment
 - Reduce stigma associated with treatment
- Buprenorphine is a potential vehicle to bring about these changes.



Function at Receptors

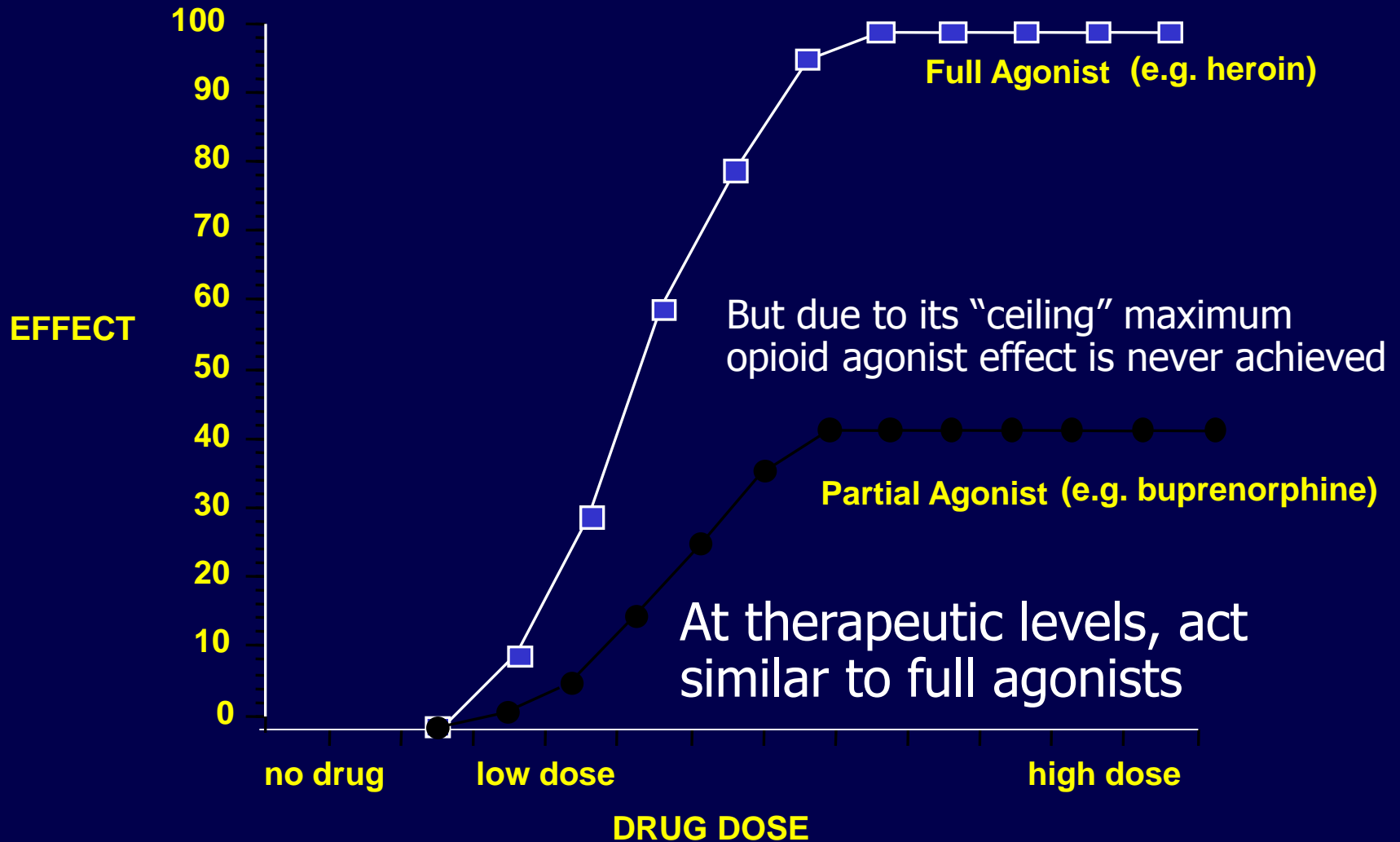
Partial Agonists

**Mu
receptor**

Partial agonist binding ...

- activates the receptor at lower levels
- is relatively less reinforcing
- is a less abused opioid type
- includes buprenorphine

Partial Agonist Activity Levels



BUPRENORPHINE

A New Law

Drug Addiction Treatment Act (DATA) 2000

- Amendment to the Controlled Substances Act
- Allows physician to prescribe narcotic drugs scheduled III, IV or V, FDA approved for opioid maintenance or detoxification treatment
 - Prior 10/2002 no drug existed
 - Methadone does not qualify Schedule II



DATA 2000: Physician Qualifications

Physicians must:

- Be licensed to practice by his/her state
- Have the capacity to refer patients for psychosocial treatment
- Limit number of patients receiving buprenorphine to 30 patients for a least the first year
- File for a new waiver after first year to increase their limit to 100 patients.
- Be qualified to provide buprenorphine and receive a license waiver



Only physicians can prescribe

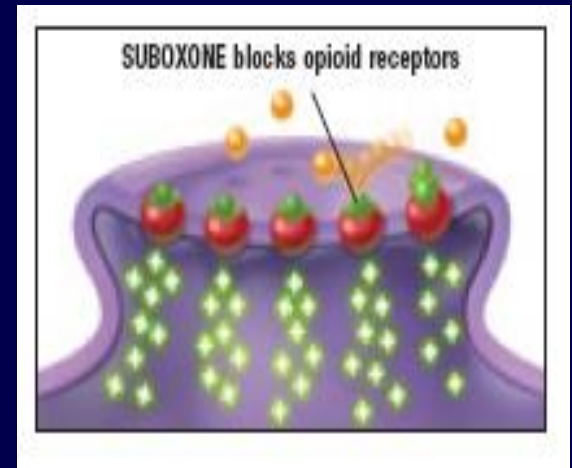
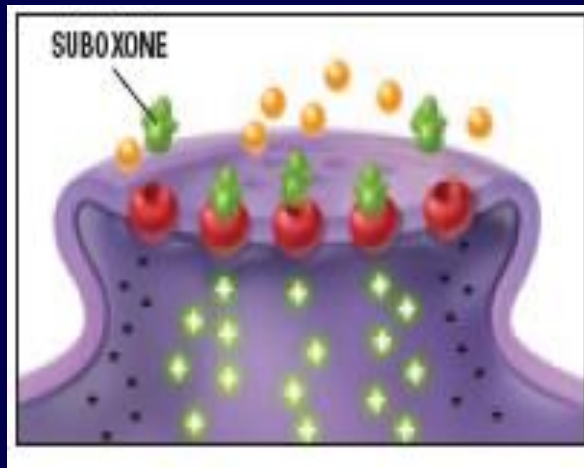
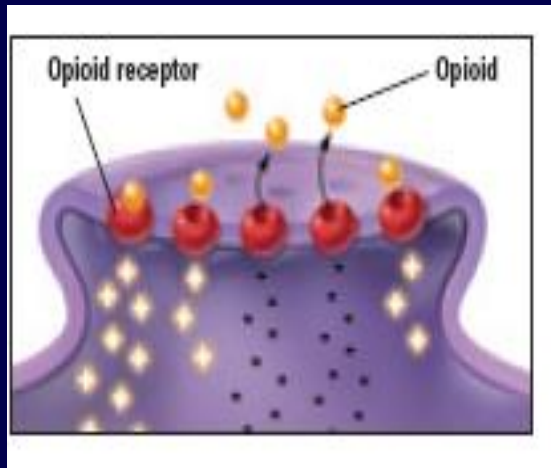
However, it takes a Multidisciplinary
Team Approach for effective treatment



Goals of Pharmacotherapy with Buprenorphine:

- Prevention or reduction of withdrawal symptoms
- Prevention or reduction of drug craving
- Prevention of relapse to use of addictive drug
- Restoration to or toward normalcy of any physiological function disrupted by drug abuse

Suboxone: Mechanism of Action



- Patient is in mild-to-moderate state of withdrawal as opioid dependence leaves the receptors

- Buprenorphine attaches to the receptors
- As it fills the receptors, withdrawal symptoms improve
- Patient also experiences a reduction in cravings

- Buprenorphine firmly binds to the mu receptors and blocks other opioids from attaching to them
- Adequate maintenance doses allow buprenorphine to fill most receptors
- Its effects won't wear off quickly due to a long duration of action

Opioid Withdrawal Assessment

| Hours after use | Grade | Symptoms / Signs |
|-----------------|-------|--|
| | 0 | Anxiety, Drug Craving |
| 4-6 | 1 | Yawning, Sweating, Runny nose, Tearing eyes, Restlessness Insomnia |
| 6-8 | 2 | Dilated pupils, Gooseflesh, Muscle twitching & shaking, Muscle & Joint aches, Loss of appetite |
| 8-12 | 3 | Nausea, extreme restlessness, elevated blood pressure, Heart rate > 100, Fever |
| 12-72 | 4 | Vomiting / dehydration, Diarrhea, Abdominal cramps, Curled-up body position |

Clinical Opiate Withdrawal Scale (COWS): *pulse, sweating, restlessness & anxiety, pupil size, aches, runny nose & tearing, GI sx, tremor, yawning, gooseflesh (score 5-12 mild, 13-24 mod, 25-36 mod sev, 36-48 severe)*

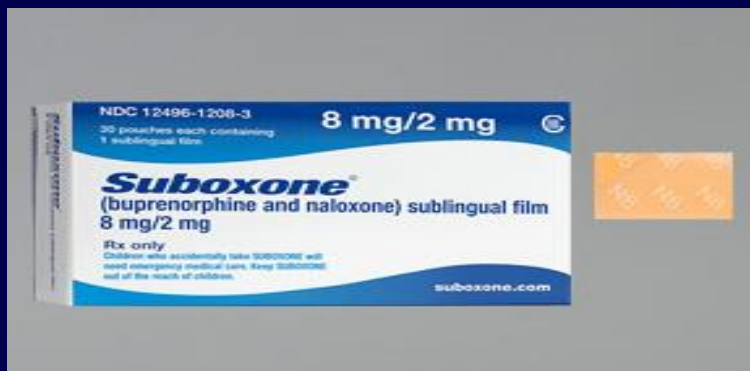
Rapid onset of effect

- **Readily absorbed sublingually:**
 - 5-20 min. for tablet to dissolve
 - Film takes less than ½ time to dissolve
- **Rapid onset of action: 30-60 min**
- **Peak plasma levels at 1-2 h**
- **Peak subjective/physiologic effect at 1-4 h**



Buprenorphine soluble film

- Fast-dissolving film strip, like a breath film strip
- 2.2 x 3.1 cm in size (paper thin)
- Placed under tongue; good mucoadhesion
- Lemon-lime flavor, orange colored
 - Thought to be more palatable than the orange flavor of suboxone
- Available in 2mg/0.5mg and 8mg/2mg doses



Understand Diversion and Misuse

Understand Diversion

- Help addicted friend
- Peer pressure
- Income

Understand Misuse

- Perceived under-dosing
- Relieve craving
- Relieve withdrawal
- Relieve other symptoms (e.g. pain, depression)
- Get high



Modified from presentation by Michelle Lofwall, MD Univ of Kentucky



Patient Education

Protecting Others and Protecting Treatment...



Acknowledgements:

This brochure was produced by STATE OBOT (State Technical Assistance Treatment Expansion Office Based Opioid Treatment of Buprenorphine), and BSAS Bureau Substance Abuse Services

Individual Sites Include:

Boston Health Care for the Homeless Program
Boston Medical Center
Baystate Brightwood Community Health Center
Cambridge Health Alliance
The Dimock Center
Duffy Health Center
Family Health Center Worcester
Greater Lawrence Family Health Center
Holyoke Health Center
Lowell Community Health Center
Lynn Community Health Center
MGH Chelsea HealthCare Center
MGH Revere HealthCare Center
South Boston Community Health Center
Stanley Street Treatment and Resources: SSTAR

Funded by:

Bureau of Substance Abuse Services
Massachusetts Department of Public Health



Pediatric/Child Exposure to Buprenorphine/Suboxone/Subutex

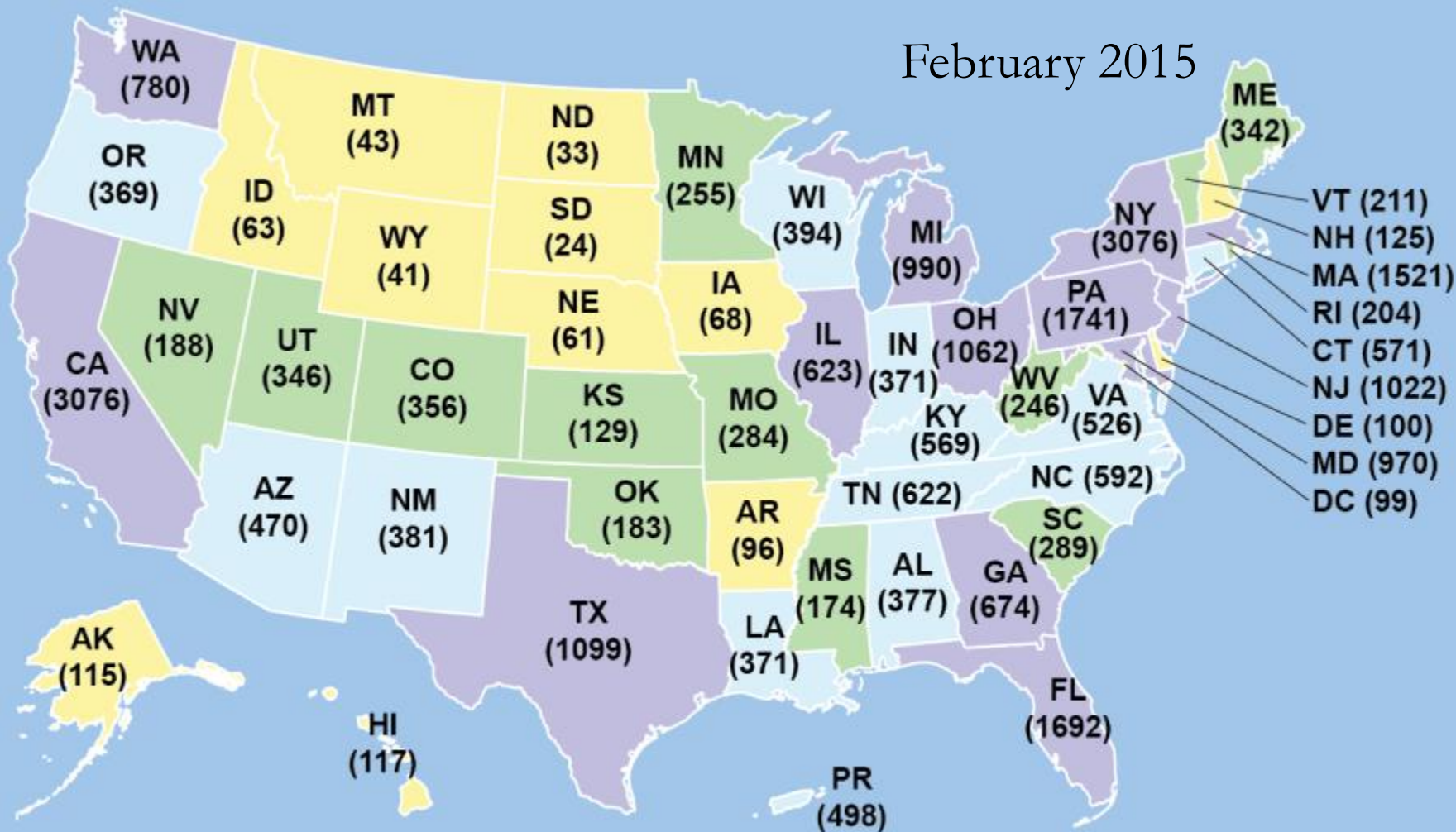
Protecting Others and Protecting Treatment



Poison Control 1-800-222-1222

Only 4% of Eligible US Doctors are Certified to Prescribe Buprenorphine

February 2015



1-125:



126-356:



357-622:

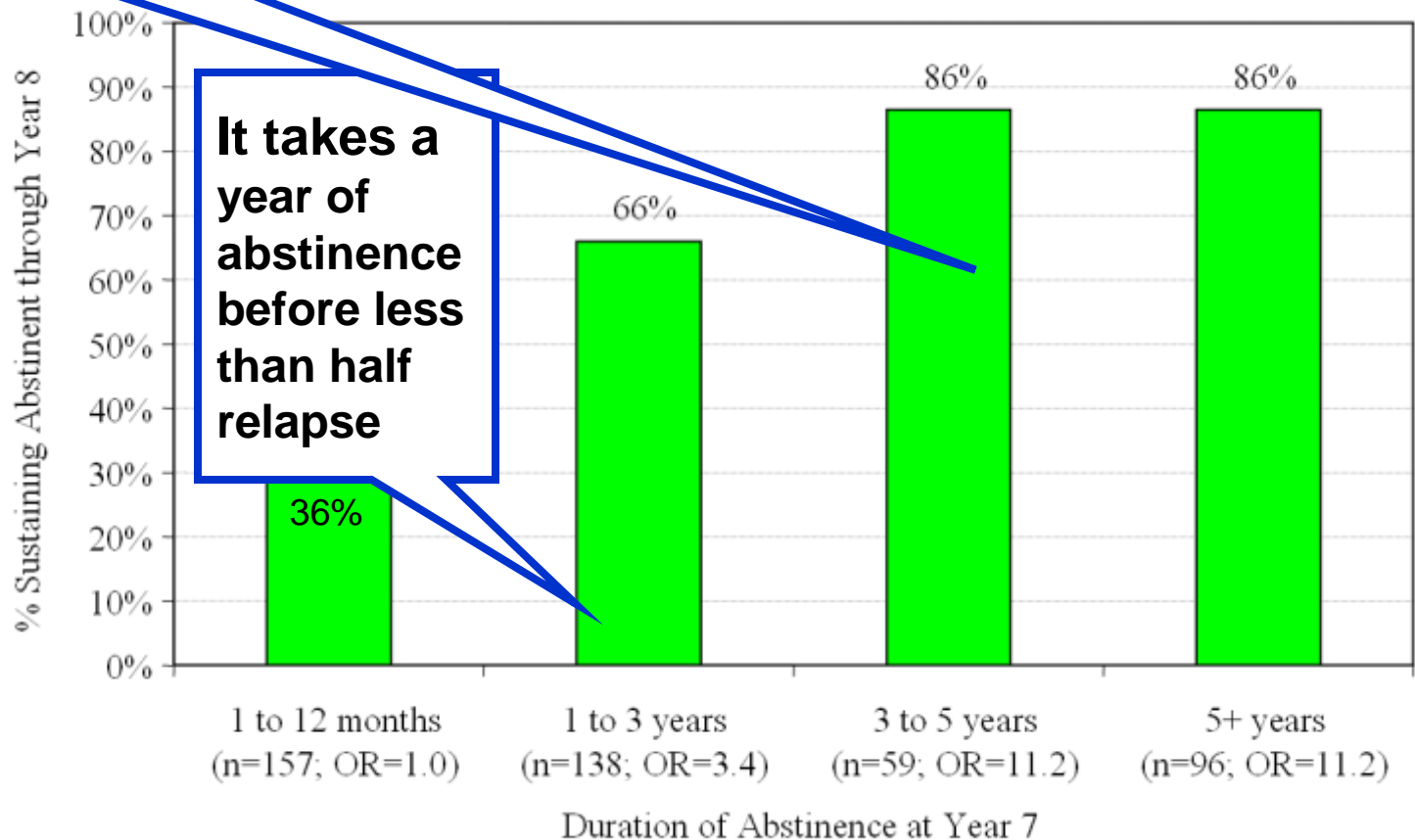


623 and over:



Extended Abstinence is Predictive of Sustained Recovery

After 5 years – if you are sober, you probably will stay that way.

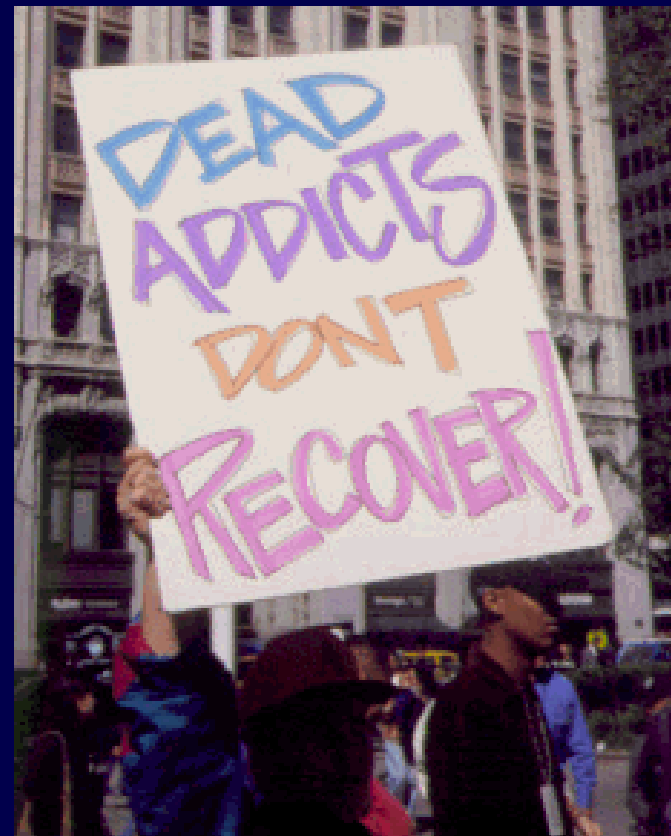


Why Maintenance?

Because it Works...

- Death rate lowered by 70% for opiate users on Methadone
- “A clear consequence of not treating..is a death rate more than 3 times greater...”

NIH Consensus Statement
JAMA 1998



Where are your patients in this picture?



Teens Attending Each Others Funerals



KEITH TEDESCO
10/14/78 - 6/29/07

NAREN BERRY
1/28/81 - 7/11/98


LENNY ORLAN
7/10/64 - 7/16/03

WILL SOMMER
9/24/80 - 5/4/04

DAVID DILL
2/2/65 - 1/3/00

GINO VENTIMIGLIA
10/8/77 - 10/23/02

In Loving Memory
Andy Carlson
December 18, 1982 - November 12, 2006



*You held us in your heart
as we hold you in ours,
forever.*

DAVID HALL
4/21/78 - 7/18/04

Drugs rip dreams, then life, from pregnant teen



19 year old
5 month's
pregnant
OD'd in her
bed, found
by her
mother



Psychosocial Treatment Modalities



Image retrieved from : <http://www.silentoutpourings.com/wp-content/uploads/2015/04/Therapy-session-1024x576.jpg>

Opioidprescribing.com

3 *AMA PRA Category 1 Credits*™ available, plus risk management and opioid education credits



OpioidPrescribing.com

Safe & Effective Opioid Prescribing for Chronic Pain



Overview

Accreditation

Needs Assessment

Faculty

Resources

Contact Us

**BOSTON
UNIVERSITY**

Safe and Effective Opioid Prescribing for Chronic Pain

Excessive or inappropriate use of opiates in the treatment of pain is a major national problem in the delivery of healthcare. Opioids are both underprescribed and overprescribed. Prescribing clinicians need training in effective communication skills as well as an understanding of when and how to prescribe opioids.

In addition to the specialists who frequently prescribe opioids (pain specialists, orthopedists, rheumatologists), primary care clinicians have increasingly taken on the burden of managing pain effectively. Safe and Effective Opioid Prescribing for Chronic Pain offers clinicians necessary education in how to work with their patients who are living with chronic pain – how to define chronic pain, how to manage its treatment, the tools available to assess pain and the risk involved in prescribing opioids, and how to discontinue treatment if necessary.

Register for New Account

REGISTER

USERNAME:

PASSWORD:

REMEMBER ME

LOGIN

Forgot your [username](#)?
Forgot your [password](#)?

New User

To access our site, you will first need to register for a user account. You can do so via the button link below.

REGISTER

User Login

USERNAME:

PASSWORD:

REMEMBER ME

LOGIN

Forgot your [username](#)?
Forgot your [password](#)?

Safe and Competent Opioid Prescribing Education (SCOPE) Program

www.scopeofpain.com

Risk Evaluation and Mitigation Strategy (REMS) Program

3 components

- *Free web-based education (including video vignettes)*
- Live conferences held around the US
- Train-the-trainer workshops



Resource/Websites

- www.buprenorphine.samhsa.org
- Addictionnurses.org
- www.samhsa.org
- www.asam.org
- Email or phone support:
 - Colleen.Labelle@bmc.org
 - 617-414-7453



Remember...

TREAT ADDICTION

SAVE LIVES



Thank You

“If we do nothing people will die”

- Dr. Wesley Clark Director Center for Substance Abuse Treatment and Mental Health Services Administration, U.S. Department of Health and Human Services



Links to PHN webinar archives

- The link to the archives and the PP slides are available at the Boston University School of Public Health website
- http://sites.bu.edu/masslocalinstitute/training/map_hn-webinars/
- To view the archive select the session you wish to view, click on the right facing arrow below the large black viewing box and the video will play
- You can also access the archive link and the PP slides on the MAPHN website at http://www.map_hn.org/webinars2015

