Medication Assisted Treatment as an alternative in Drug Courts*

National Drug Court Institute

*portions of this presentation include adapted slides
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SESSION GOALS

1. Review biological basis for physical drug dependence and characteristics of addiction

2. Describe medications currently FDA-approved for Substance Abuse treatment – focusing on Opioid Dependence

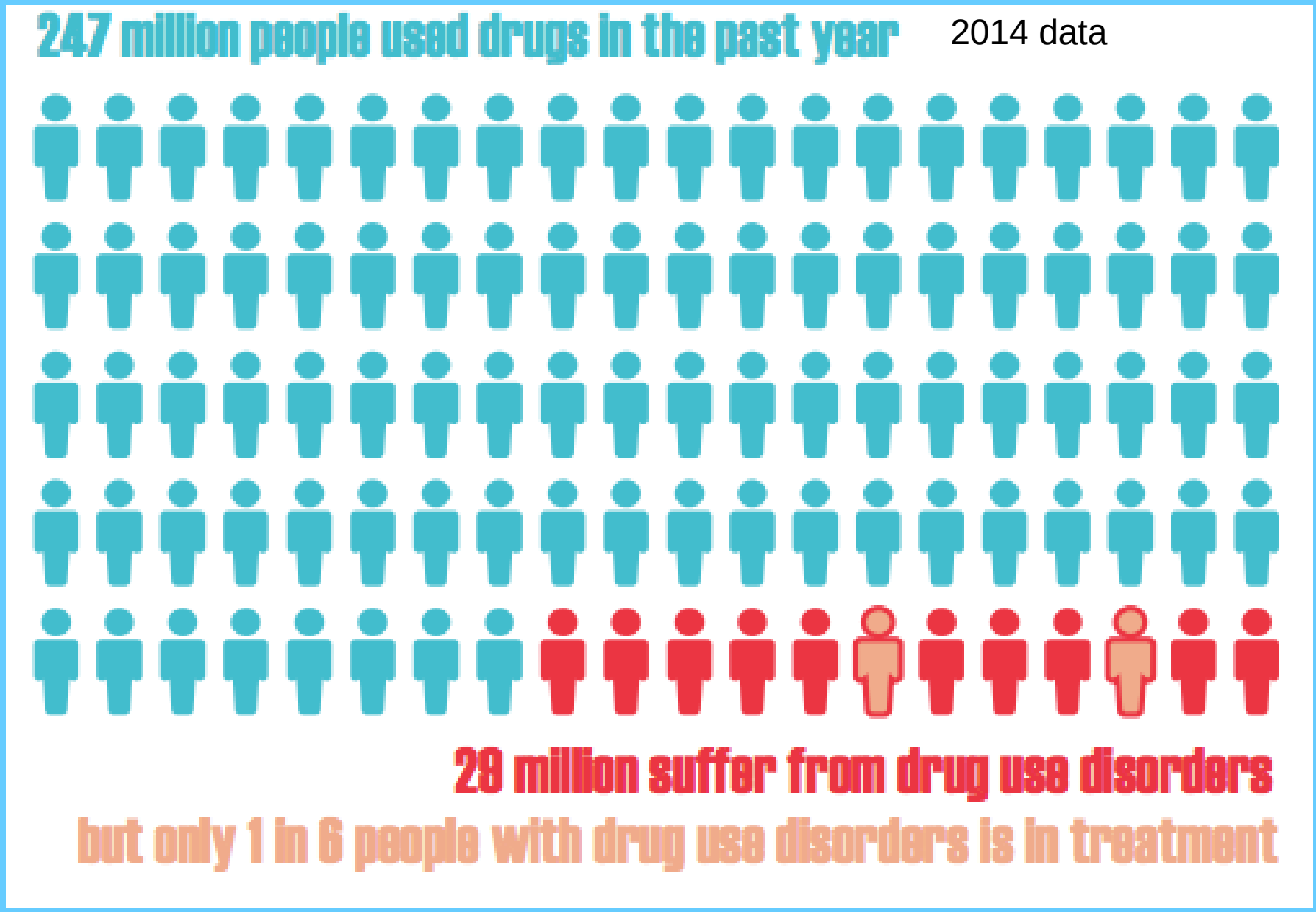
3. Identify the risks and benefits of MAT; key indications, contra-indications, and diversion risks with medications that treat Opioid Use Disorders, as well as risks of NOT using MAT

4. Discuss the "Meaning" of MAT and its Implementation in your Drug Courts

(See: "Medication Assisted Treatment Implementation Checklist" and "Drug Court Practitioner Fact Sheet August 2016: Medication Assisted Treatment for Opioid Use Disorders in Drug Courts")

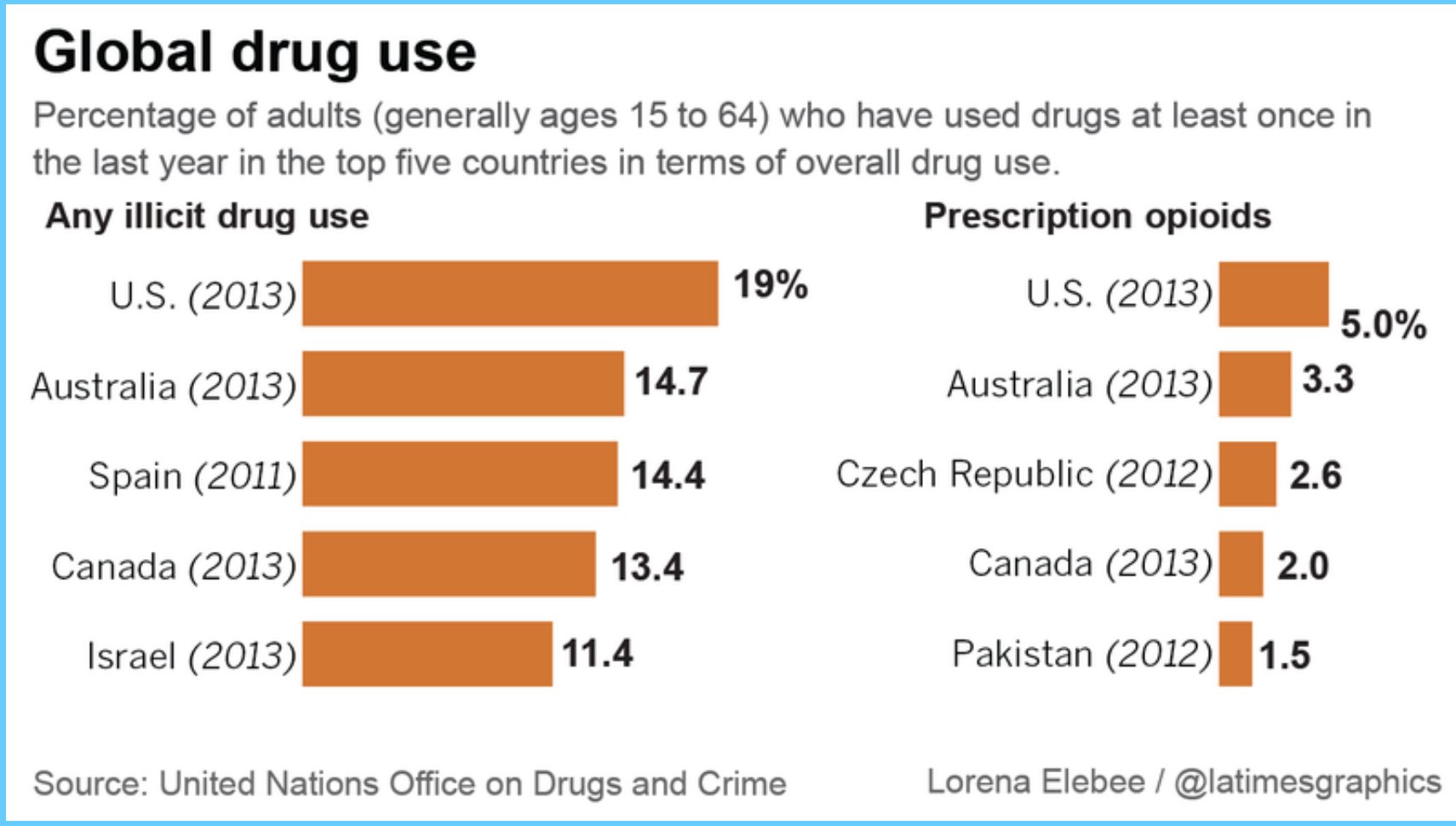
Part One

- Problem Review:
  - What's the Big Picture?
  - Physical Dependence on Substances
  - Addiction: Physical Dependence PLUS
  - Treatment Challenges – both drug dependence and addictive behaviors and patterns



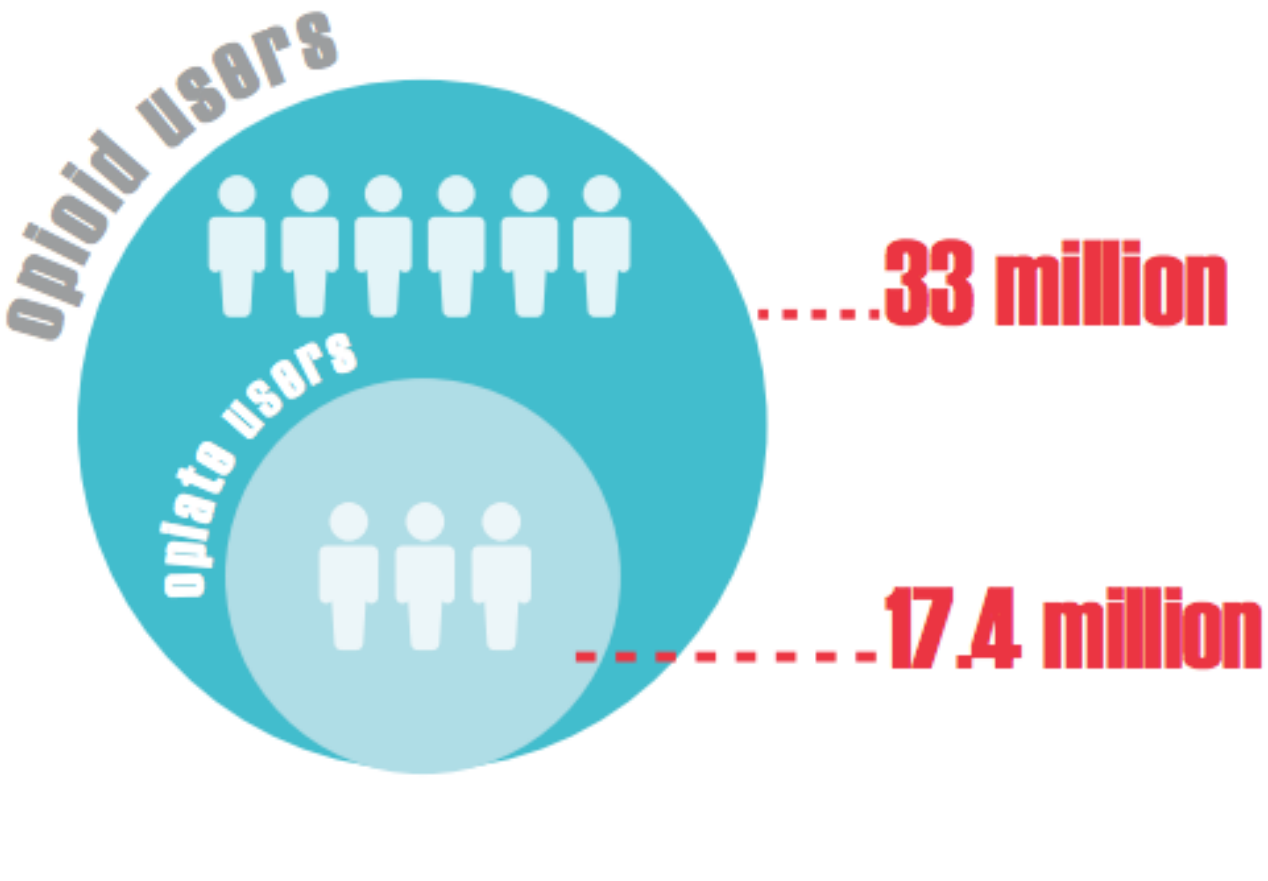
United Nations Office on Drugs & Crime (UNODC. 2016)

About 247 million used illicit drugs/year (2014)
About 11% develop SUDs



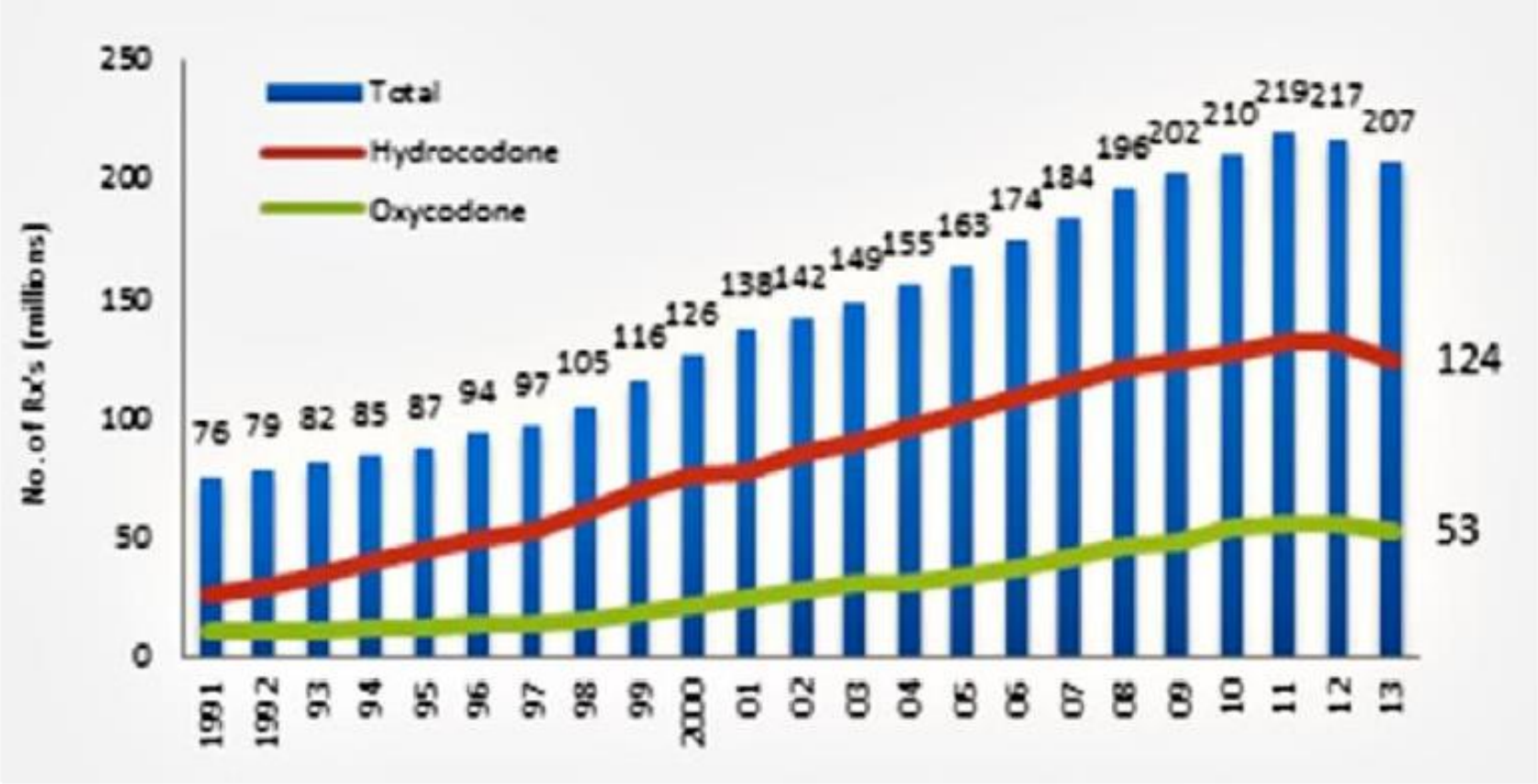
Est. 207,400 drug-related deaths in 2014; most due to opioid overdoses

Global number of users



Note: ***Opioids include the non-medical use of prescription opioids and opiates (opiates include opium and heroin)*****.**

US Opioid Prescription Increase 1991-2013



Volkow – 04/02/2014 - Testimony
http://www.drugabuse.gov/about-nida/legislative-activities/testimony-to-congress/2014/harnessing-power-science-to-inform-substance-abuse-addiction-policy-practice

Hydrocodone & Fentanyl

- In 2014 Americans consumed about 99% of Hydrocodone globally produced -
- In 2014, the DEA reclassified hydrocodone from a schedule III to a schedule II drug in because of its high risk for misuse/abuse
- Insys Therapeutics' revenue is almost entirely derived from highly addictive opiate fentanyl, marketed as Subsys Fentanyl (sublingual spray intended for end stage Cancer). In first 6 months of 2015, Subsys sales accounted for $147.2 million of $148.4 million of Insys Therapeutics’ revenue.

ADDICTION

- NIDA Definition -

A DISEASE CONSISTING OF A NUMBER OF BRAIN CHEMISTRY DISORDERS

Addiction *is related to pleasure/reward pathway activation by drugs of abuse and* ***includes maladaptive behavioral response to neurological dependence***

American Society of Addiction Medicine, American Pain Society, American Academy of Pain Medicine – *Recommended Definitions*:

I. **Addiction** is a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

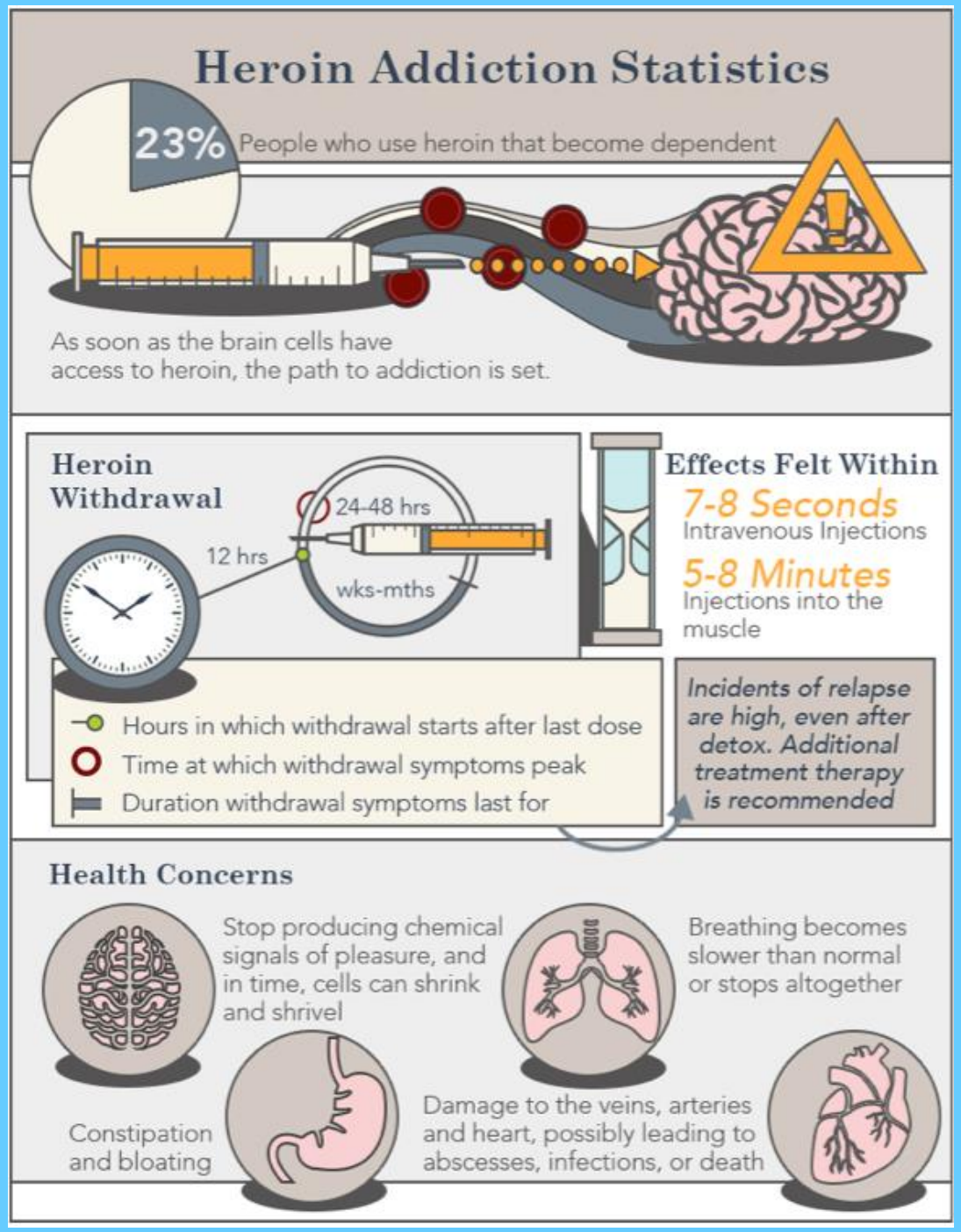
II. **Physical Dependence** is a state of adaptation that is manifested by a drug class specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist.

III. **Tolerance** is a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug's effects over time.

Tolerance & Physiologic Dependence Precedes Addiction

- EG: physical dependence to opioids means that the body relies on a external source of opioids to prevent withdrawal.
- Many substances – ie: caffeine, nicotine, sugar, anti-depressants - can cause physical dependence, it is not a property unique to opioids or alcohol.
- This is a normal adaptive neurologic response to ongoing opiate exposure (which is NOT normal for the brain).
- **Physical dependence can be managed more helpfully with Medications (MAT) to enable the client/patient to better focus on the difficult work of overcoming and healing from their addiction.**

(most people who are dependent do not suffer from addiction)

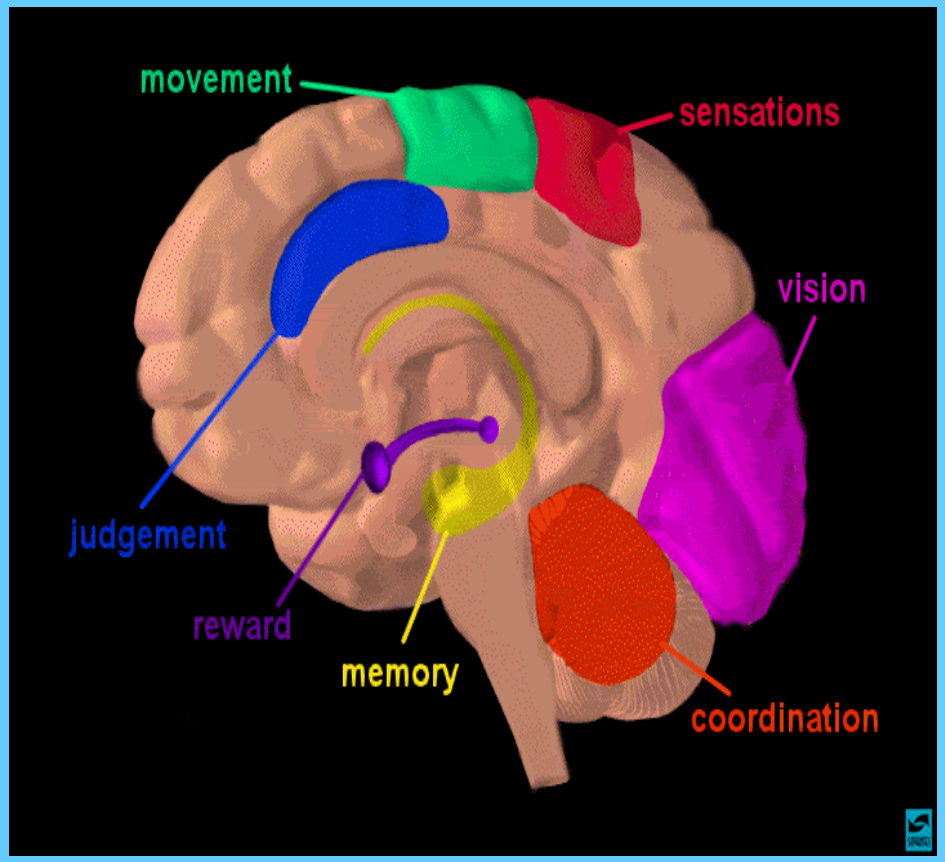


Withdrawal is very painful and a big disincentive to getting into and staying in treatment.

But continued use is life-threatening in the long-term & degrades short term health

American Addiction Centers. 2016.

DOPAMINE REWARD SYSTEM: Essential to Neurologic Reinforcement System

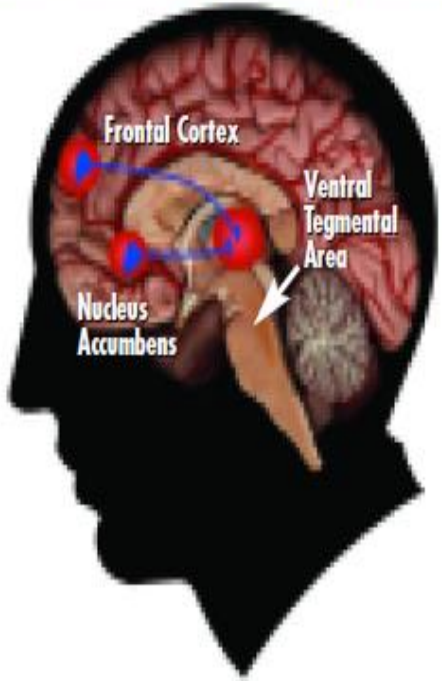


- *Every* substance of abuse has some effect on the limbic (dopamine) reward system
- Dopamine, one of 100+ neurotransmitters, is found in several regions of the brain; is involved in pleasurable feelings, activity reinforcement, movement, motivation, & emotions

Review of Dopamine Action

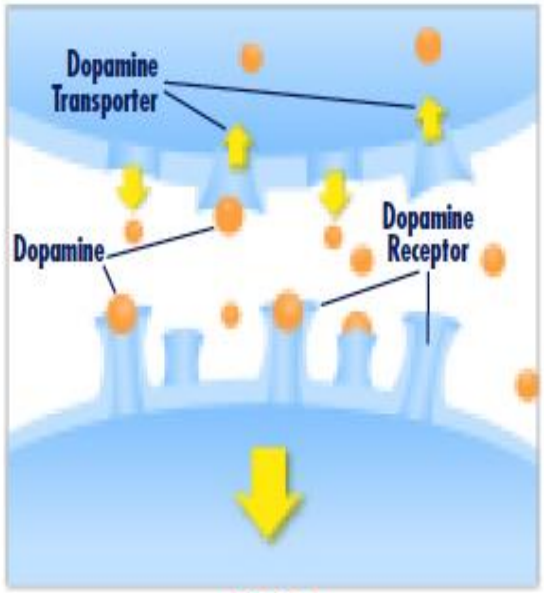
DRUGS OF ABUSE TARGET THE BRAIN'S PLEASURE CENTER

Brain reward (dopamine) pathways

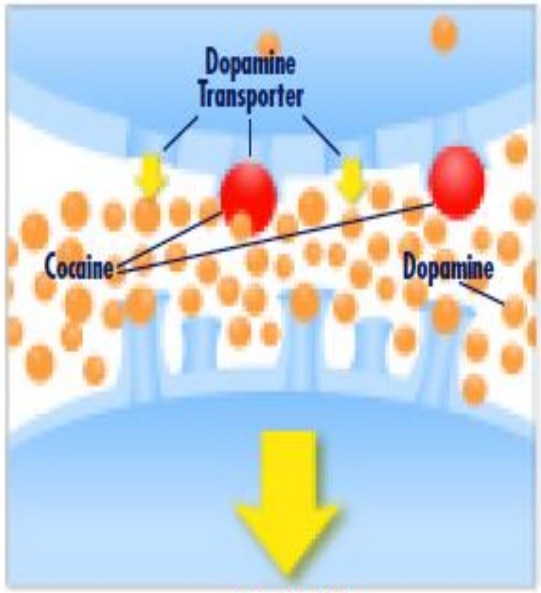


These brain circuits are important for natural rewards such as food, music, and sex.

Drugs of abuse increase dopamine

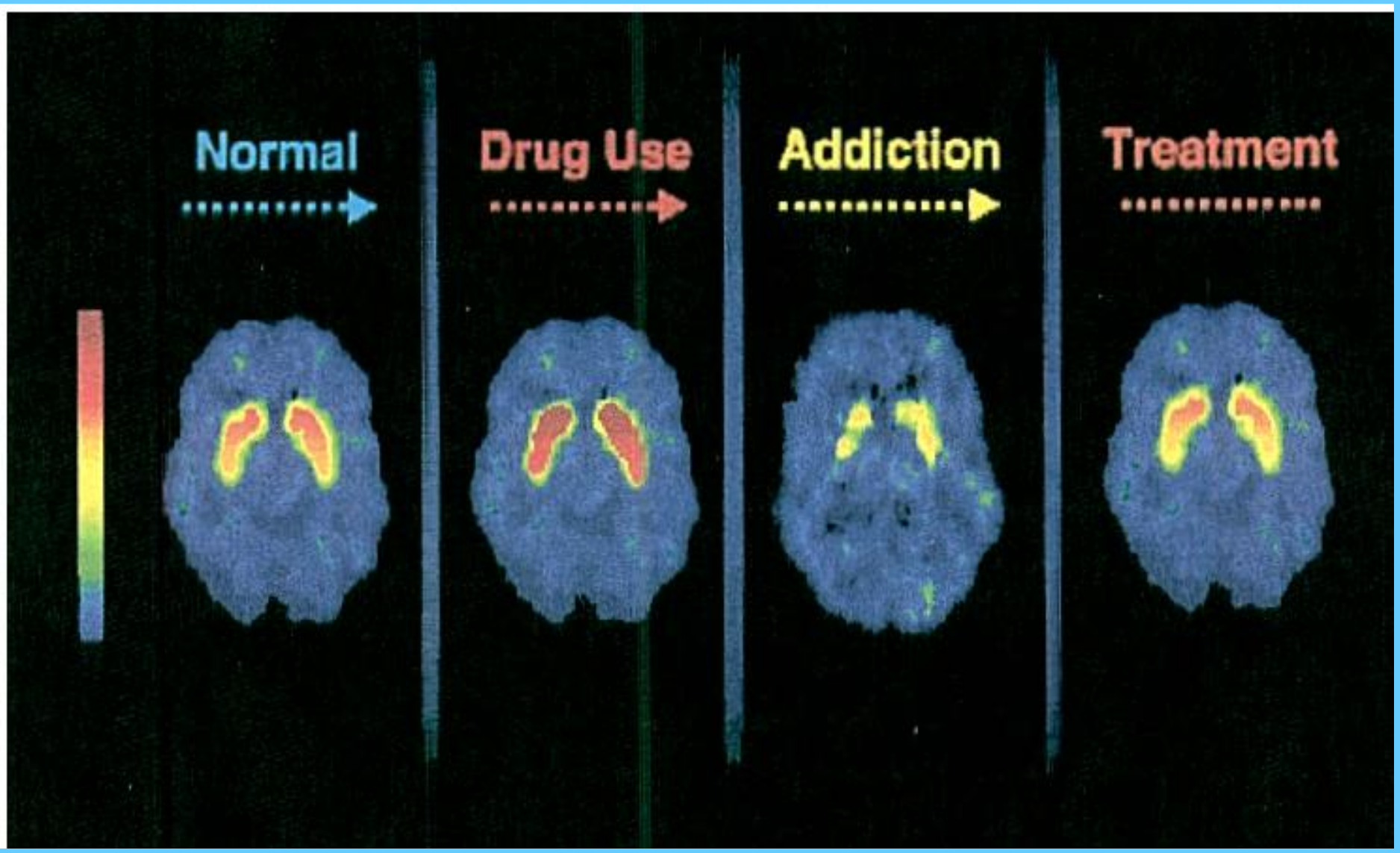


FOOD



COCAINE

Typically, dopamine increases in response to natural rewards such as food.
When cocaine is taken, dopamine increases are exaggerated, and communication is altered.


Normal
Drug Use
Addiction
Treatment

M.A.T.

- MEDICATION ASSISTED TREATMENT
  - Addresses Physical Dependence Challenges Most Effectively
  - Thereby Permitting Addiction Issues to be Better Treated
  - Best Practice Standards REQUIRE Drug Courts to permit the use of MAT
  - Drug Courts operating below the recognized standard of care may jeopardize their standing and funding

Drug Treatment Courts Require Strong Teams

- Assessment is essential upfront step
- Evidence-based treatment providers
- All team members must be culturally-competent, with understanding of sub-cultures (drugs of choice, veteran status, ethnicity, co-occurring disorders, etc.)

Inability to Comply
Is Different than
“Non-Compliance”

Good Initial & Ongoing **Assessment**
Is Essential to Distinguishing Difference

Medication Assisted Treatment (MAT) is Recommended

Why?

Because **SUDs are chronic, potentially fatal, brain diseases, and medications are available for opiate/opioid addictions**!

–Similar to treatment of hypertension or Type 2 Diabetes

•Medications + psychosocial treatment saves & restore lives

USE SPECIFICALLY FOR:

- Intoxication/overdose
- Withdrawal/detoxification
- Abstinence initiation/use reduction
- Relapse prevention
- SUDS sequelae (psychosis, agitation, etc.)

Substances for which Medications are FDA-approved

- Opioids
- Alcohol
- Benzodiazepines
- Tobacco (nicotine dependence)

Substances for which Medications are NOT FDA-approved

- Cocaine
- Methamphetamine
- Hallucinogens
- Cannabis
- Solvents/Inhalants

When to Consider Medications for SUDs

Assess patient for:

- Severity of Concomitant Medical Illness: Patient's ability to tolerate medication?
- Pregnancy: opioid therapy ***should be offered*** to pregnant opioid/heroin addicts; medications that can be associated with adverse physical effects should be avoided (e.g. naltrexone, disulfiram (Antabuse))
- Phase(s) of Recovery:
  - Medications for medical withdrawal or
  - medication to assist with maintenance of abstinence following withdrawal, and/or
  - to reduce craving and stabilize in non-use

FDA Approved Medications for SUDs

- ***Opioid use disorder***

-*Buprenorphine/naloxone* (Suboxone®) - used to treat/prevent withdrawal and block opiate receptors; has long half-life so is much less addictive; but can cause WD

-*Methadone* – must be administered at specially licensed clinics

-*Naltrexone* (Vivitrol®) – opiate blocker - **must be detoxed for 7-10 days before starting**; stops craving & causes no WD

- ***Opioid overdose***

-*Naloxone* (Evzio®, Narcan)blocks opiate receptors; reverse overdose

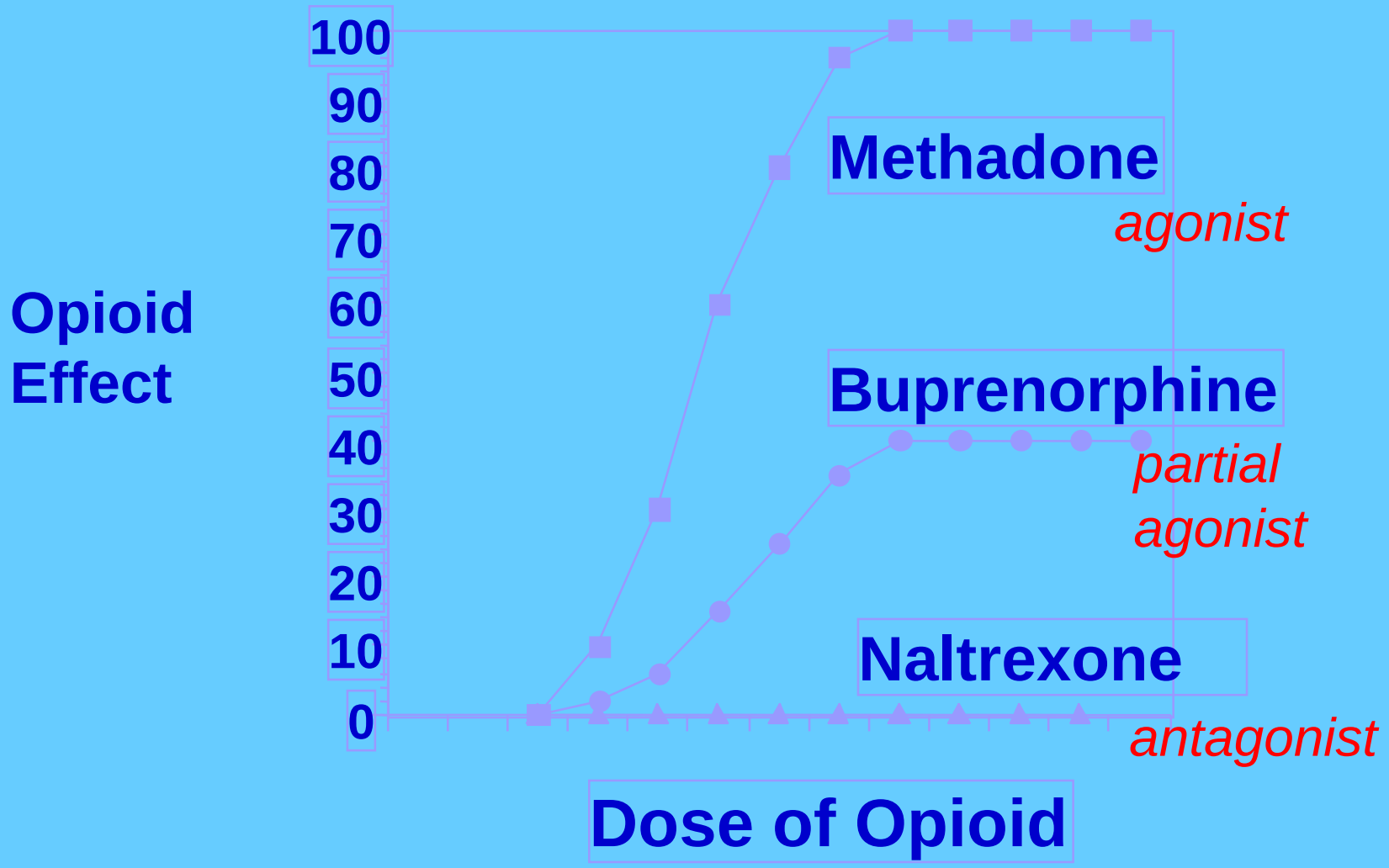
- ***Alcohol use disorder***

-*Naltrexone* (Revia®, Vivitrol®) – MUST be detoxed before starting; benzodiazepines generally used to support alcohol detox

-*Disulfiram* (Antabuse®)

-*Acamprosate* (Campral®) -helps maintain sobriety among sober

What is the Difference between Opioid Agonists & Antagonists?



MAT for Opioid Use Disorders

Methadone and buprenorphine are first-line treatment for opioid use disorders

- Methadone better for treatment retention
- Buprenorphine/naloxone more widely available
- Both *opioid agonist therapy* (OAT) medications consistently and significantly improve outcome versus placebo, no treatment, or oral naltrexone

Extended-release Injectable Naltrexone

- Superior to placebo in double-blind, RCT(trial)
- Further research needed to directly compare to OAT

Opioid Dependence Therapy: Antagonist Treatment

Naltrexone

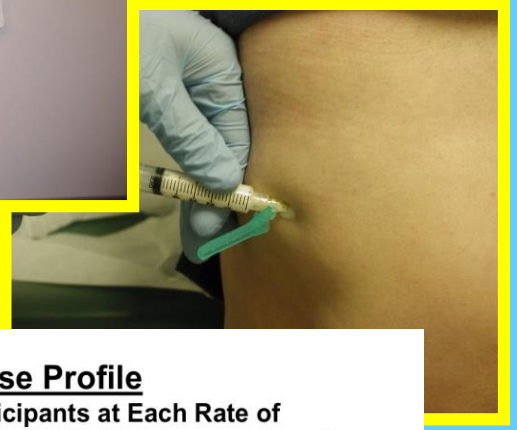
Why antagonist therapy?

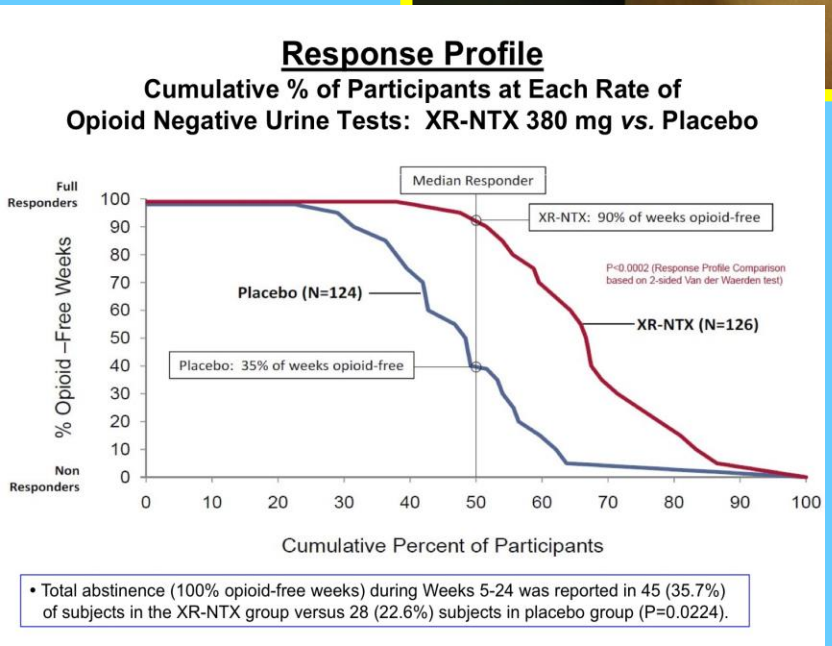
- Block effects of a dose of opiate (Walsh et al. 1996)
- Prevent impulsive use of drug
- Relapse rates high (90%) following detoxification with no medication treatment
- Dose (oral): 50 mg daily, 100 mg every 2 days, 150 mg every third day
- Biggest issue is lack of compliance; but those who “test” naltrexone by taking a dose of opioid and experiencing no effect do better with the medication (Cornish JW, et al. 1997)
- **Injectable naltrexone (Vivitrol) provides a viable alternative, higher compliance rates**
- Side effects: hepatotoxicity, monitor liver function tests every 3 months
- Clinical lore/biasthat not as effective as buprenorphine but may not be true if using injectable formulation (vivitrol)

Who is a Candidate For Naltrexone?

- The patient is opioid free for 7-10 days
- The patient does not have severe or active liver or kidney problems (Typical guidelines suggest liver function tests no greater than 3 times the upper limits of normal, and bilirubin normal)
- The patient is not allergic to naltrexone, and no other contraindications are present (rarely would someone be allergic to naltrexone, but opioid addicted individuals sometimes may report an allergy as this is not a preferred treatment or they may have started naltrexone before being completely withdrawn from opioids and experienced precipitated withdrawal—ask patient about the time frame of adverse events when trying to evaluate)

Extended-Release Naltrexone (Vivitrol): opioid antagonist approach





- BLOCKS OPIOID ACTION via monthly intramuscular injection by nurse, PA, MD, or pharmacist
- Non-narcotic, not a controlled substance
- Must detox off opioids first!!
  - In rehab/detox, prison/ jail, or other safe setting
- Not for use if:
  - Pregnant
  - Chronic pain requiring opioids

Maintenance Therapy with Buprenorphine -

Benefits:

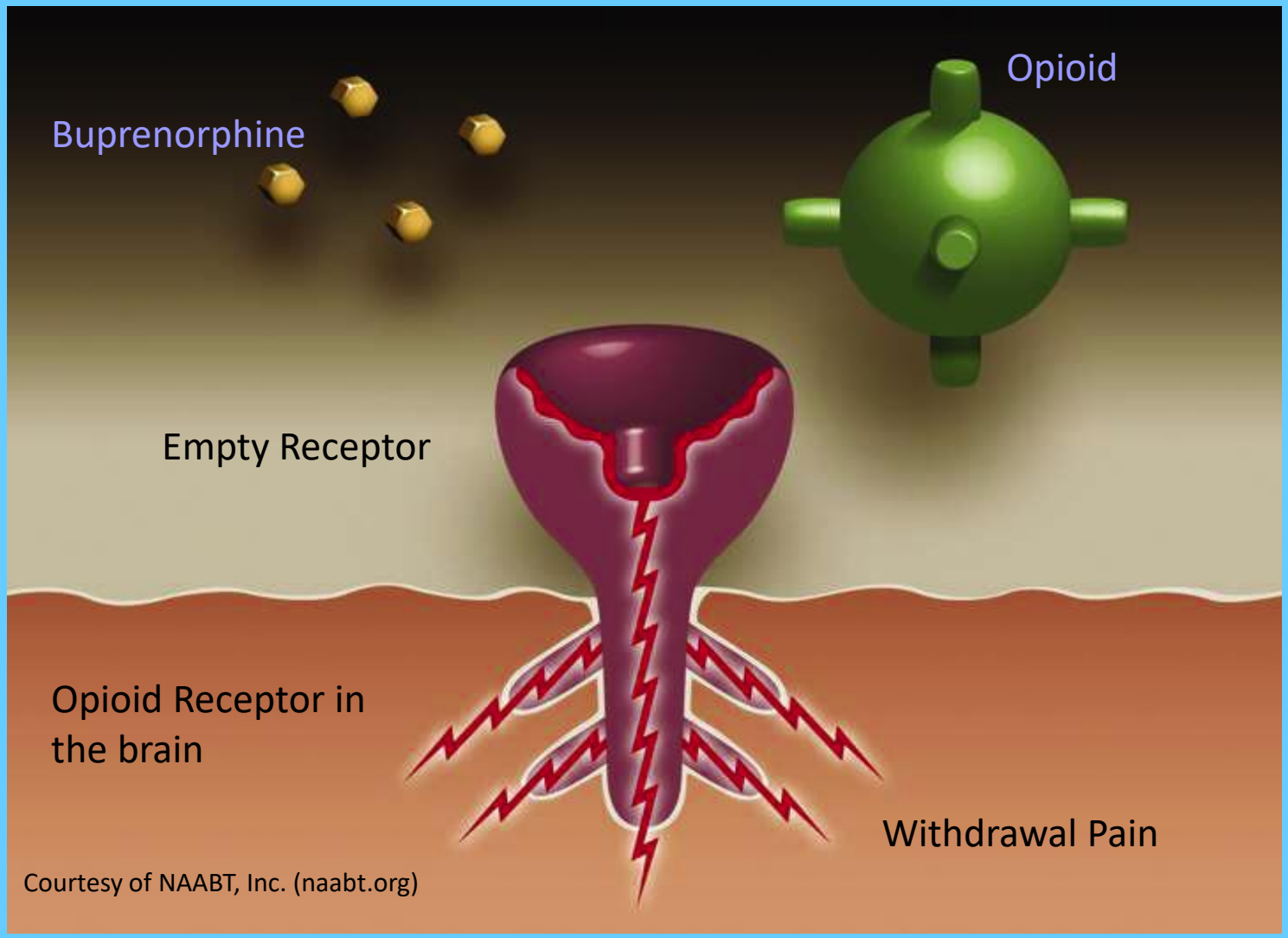
- Lifestyle stabilization
- Can be provided in a doctor's office by someone licensed to prescribe it (blocks for 24 hrs; then partially for up to 64 hrs)
- Available by prescription
- Withdrawal more easily tolerated; reduces craving
- One physician for patients with multiple illnesses

Downsides:

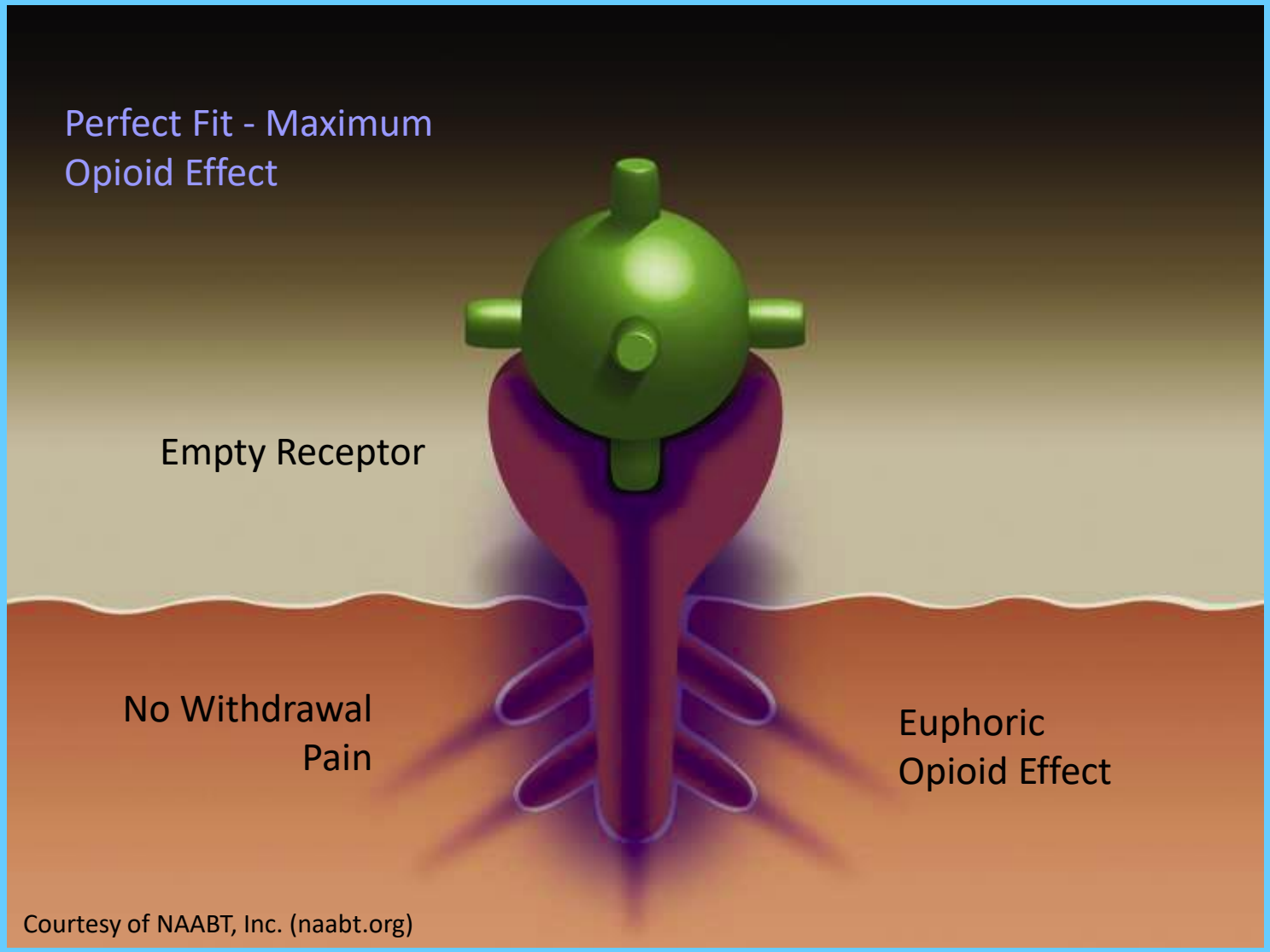
- Diversion
- Withdrawal
- Meaning of maintenance treatment

CSAT, 2005

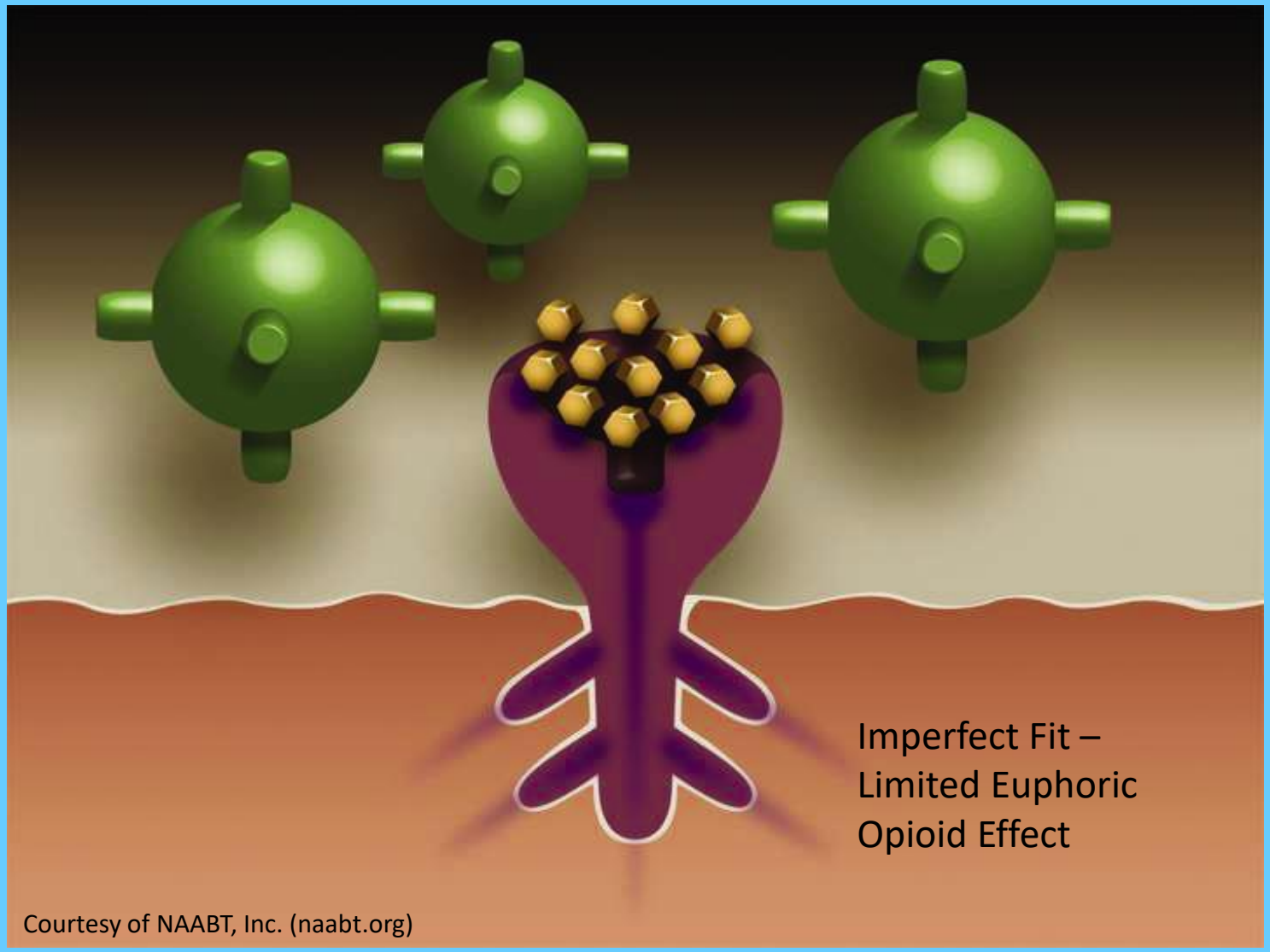
Buprenorphine: Partial Agonist Approach



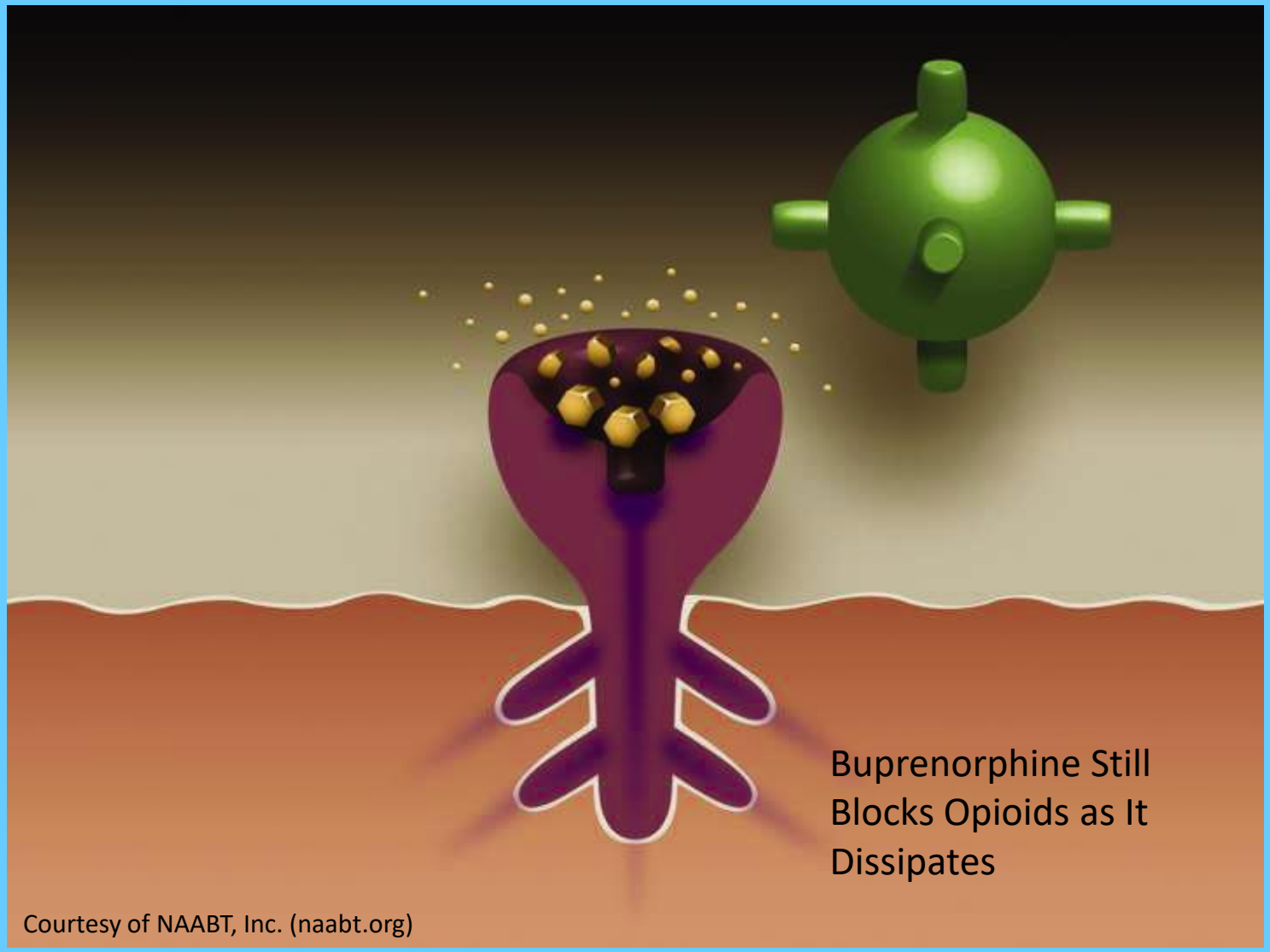
Opioid receptor unsatisfied -- Withdrawal. As someone becomes “tolerant” to opioids their opioid receptors become less sensitive. More opioids are then required to produce the same effect. Once “physically dependent” the body can no longer manufacture enough natural opioids to keep up with this increased demand. Whenever there is an insufficient amount of opioid receptors activated, the body feels pain. This is withdrawal.



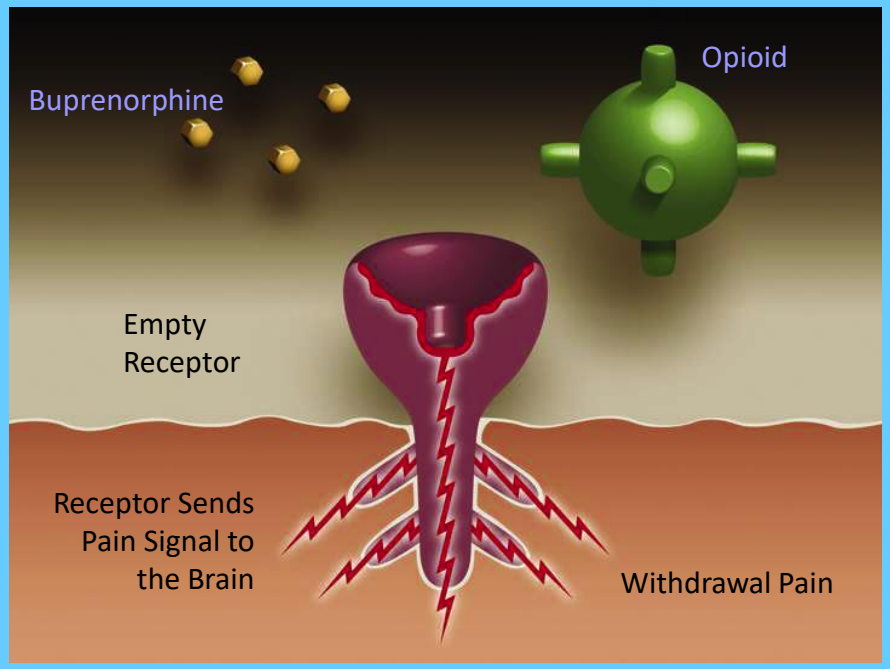
Opioid receptor satisfied with a full-agonist opioid. The strong opioid effect of heroin and painkillers stops the withdrawal for a period of time (4-24 hours). Initially, euphoric effects can be felt. However, after prolonged use, tolerance and physical dependence can develop. Now, instead of producing a euphoric effect, the opioids are primarily just preventing withdrawal symptoms.

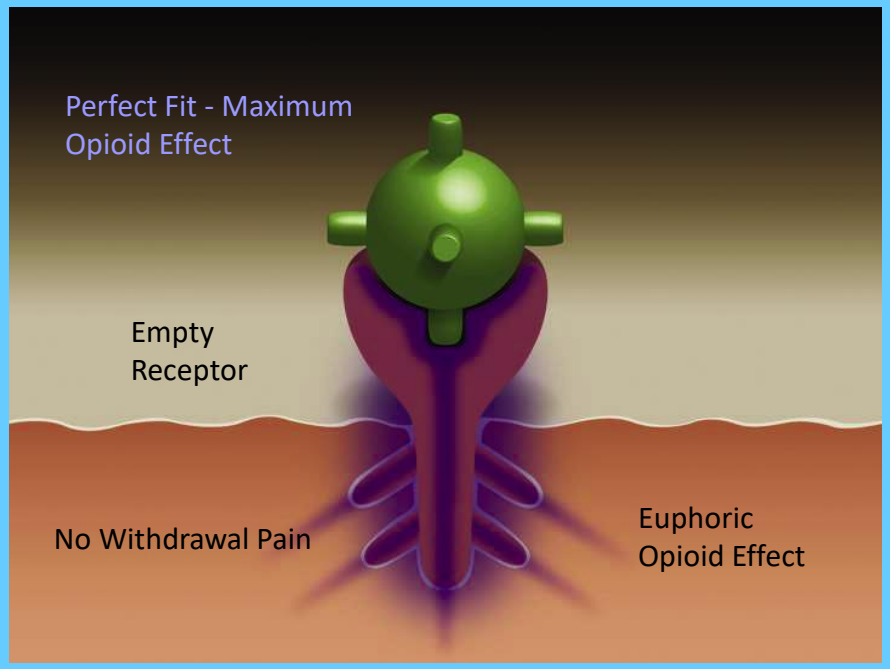


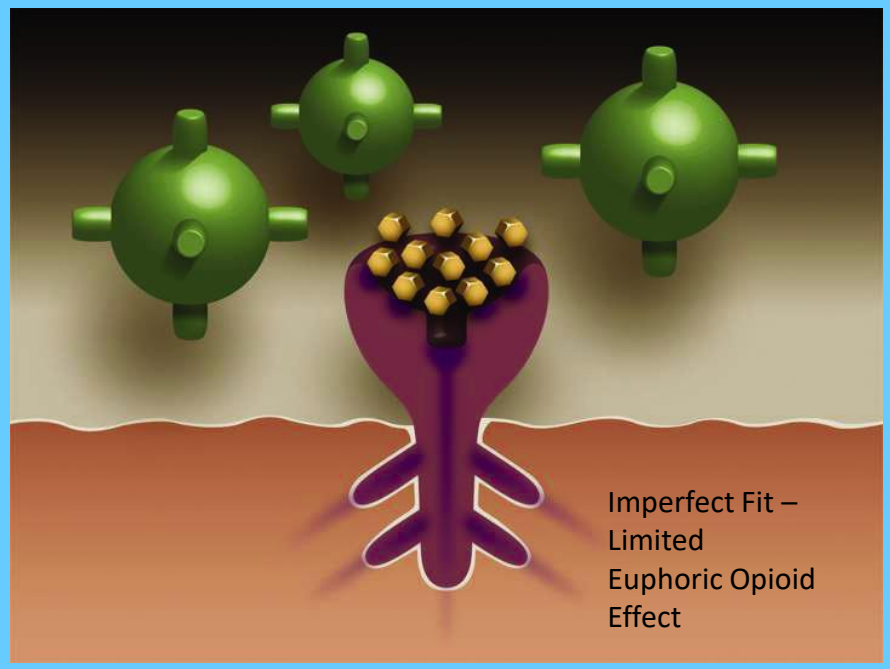
Opioids replaced and blocked by buprenorphine. Buprenorphine competes with the *full agonist opioids* for the receptor. Since buprenorphine has a higher *affinity* (stronger binding ability) it expels existing opioids and blocks others from attaching. As a *partial agonist*, the buprenorphine has a limited opioid effect, enough to stop withdrawal but not enough to cause intense euphoria.

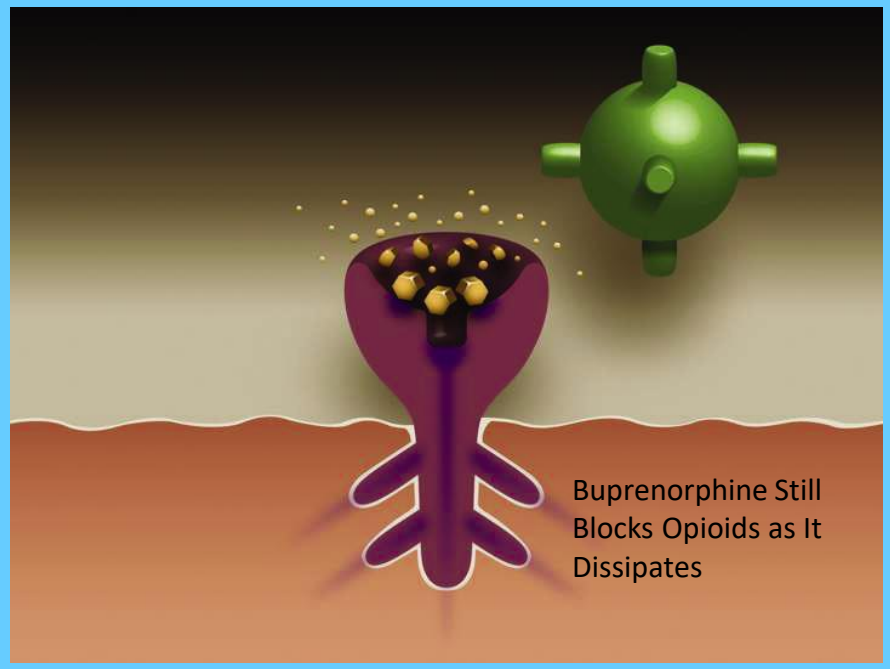


Over time (24-72 hours) buprenorphine dissipates, but still creates a limited opioid effect (enough to prevent withdrawal) and continues to block other opioids from attaching to the opioid receptors.



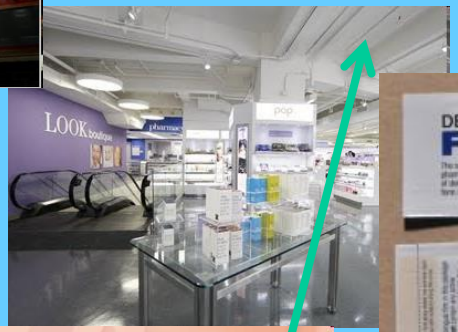


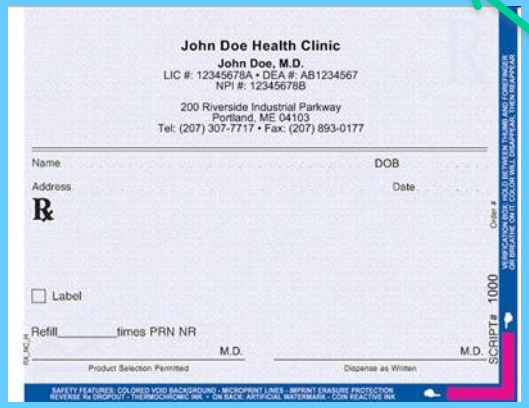




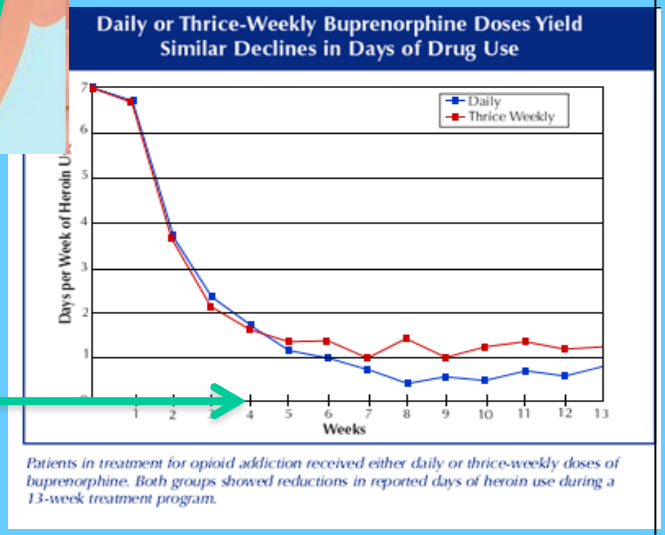
Courtesy of NAABT, Inc. (naabt.org)

Advantage of Buprenorphine: Office or Pharmacy-based Treatment Settings





- Medical office visit
- Retail pharmacy
- Chronic treatment



Suboxone, Zubsolv, & Subutex

- **Suboxone** is a combination of buprenorphine and naloxone, which is added to decrease its potential for misuse (because it will precipitate withdrawal if it's released via crushing).
- **Suboxone Film** approved in 2010, is a quick-dissolving sublingual film – less easy to divert.
- **Zubsolv** – approved in 2013, is also a combo of bup + naloxone – 1x daily sublingual tablet
- **Subutex** approved in 2002 as a buprenorphine monotherapy; since 2013 not been sold in US – is replaced by the single active ingredient of generic buprenorphine

Maintenance Therapy with Methadone

Methadone (must be administered through a registered narcotic treatment program)

- Characteristics
  - Long acting mu agonist
  - Duration of action: 24-36 h
  - Dose: important issue and philosophical issue for many programs
  - 30-40 mg will block withdrawal, but not craving
  - Illicit opiate use decreases with increasing methadone dose
  - 80-100 mg is more effective at reducing opioid use than lower doses (e.g.: 40-50 mg/d)

Strain et al., 1999

Maintenance Therapy with Methadone

Benefits:

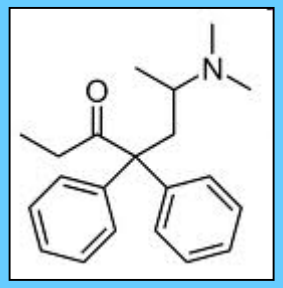
- Lifestyle stabilization
- Improved health and nutritional status
- Decrease in criminal behavior
- Employment
- Decrease in injection drug use/shared needles

Downsides:

- Overdose possible
- Oversedation possible
- Withdrawal
- EKG changes
- Diversion
- Meaning of maintenance treatment

CSAT, 2005

Stigma & Myths Re: Methadone Persists



Problems:

- Federally-licensed clinics treating opioid dependence only
  - limited locations
  - limited number of treatment slots
  - may only take insurance
  - daily directly observed therapy (DOT)
- Patients have negative views (being sedated, 'rotting teeth/ bones', forced withdrawal, 'handcuffs')
- Providers have negative views of methadone patients and clinic settings aren't conducive to therapeutic interactions

Comparisons to consider

Buprenorphine	**Methadone**	**Heroin**
Partial agonist	Full agonist	Full agonist
Long half-life (24 to 60 hours)	Long half-life (8 to 59 hours)	Short half-life (uneven Plasma levels – leads To craving & WD
Ceiling effect; good safety profile	No ceiling effect (useful in patients dependent on high doses of opioids)	No ceiling effect

MOST FREQUENTLY ABUSED DRUG: ALCOHOL

- **Leading Cause of Mental Retardation in Developed World: FAS & FASD issues**
- **Probably accounts for many psychiatric mis-diagnoses: ADHD, ADD, ODD, Borderline Personality Disorder, etc.**
- **Present with most other abused drugs**
- **Involved in MOST cases of Domestic Violence**

ALCOHOL MAT

- Extended release injection of Naltrexone (Vivitrol) associated with reduced mortality & hospital readmissions for alcohol dependence
- Overall, alcohol MAT improves outcomes at small to moderate rate
- No particular ETOH MAT is consistently better than another - depends on individual case
- ALL clients do better when supervised and with consistent EB-manualized counseling

Oral Naltrexone Use in treatment of Alcohol Dependence

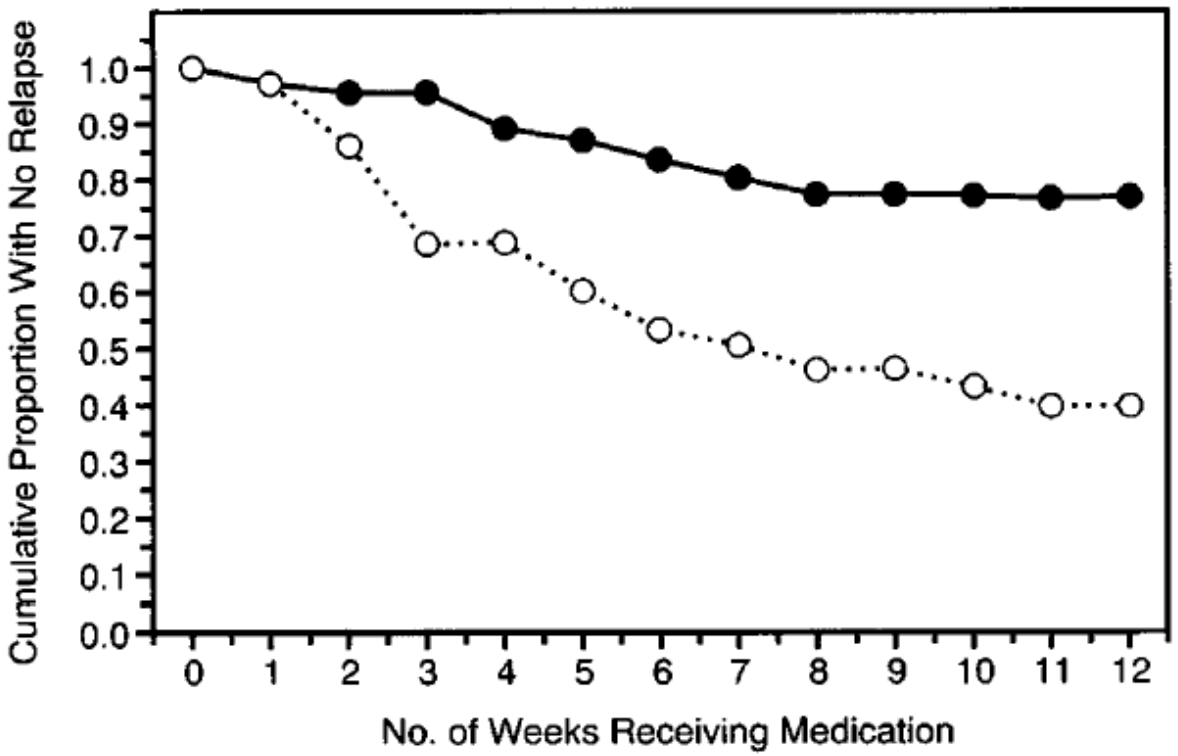
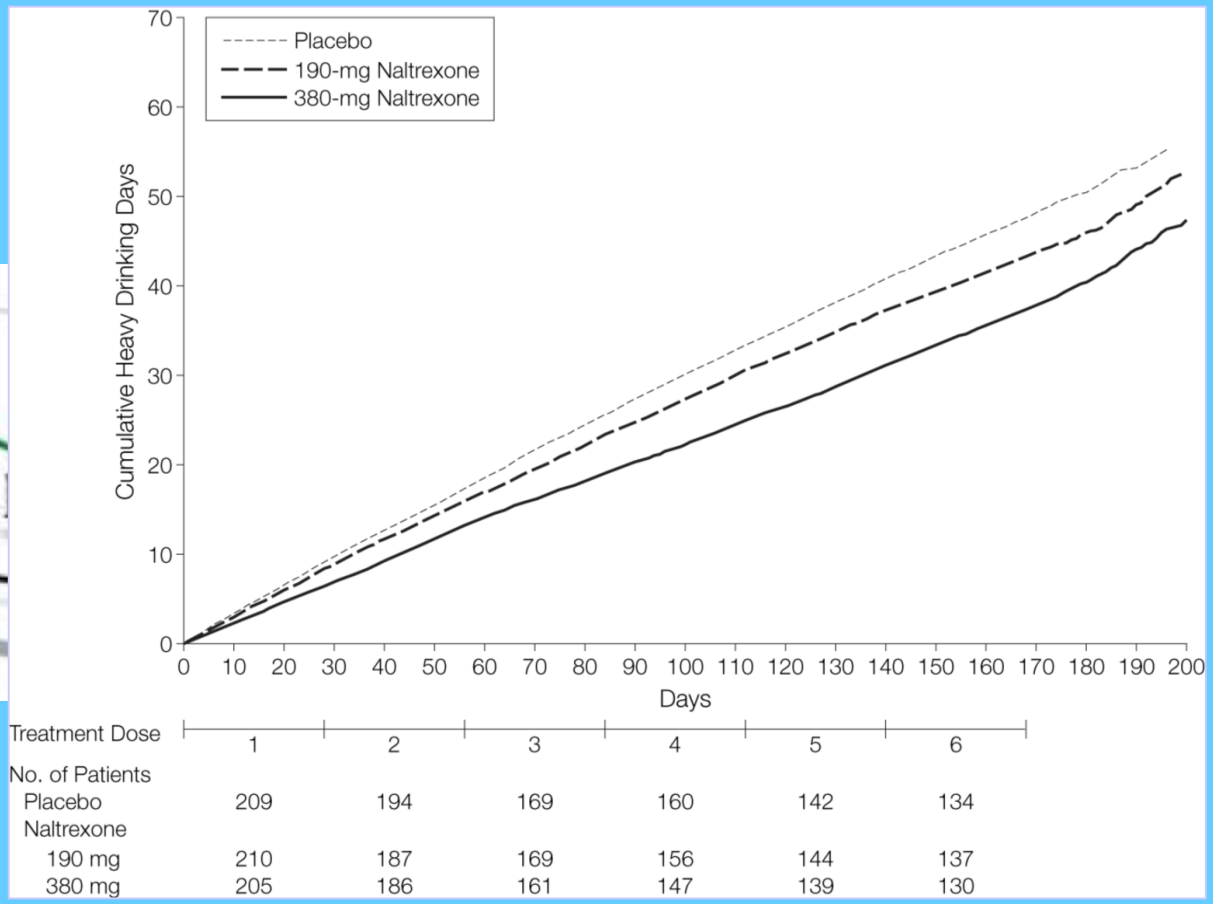


Fig 2.—*Relapse rates (as defined in the text) for the naltrexone hydrochloride- (closed circles) and placebo-treated (open circles) groups across the 12 weeks of the study.*

Volpicelli et al: 1992 Arch Gen Psych 49(11):876-80

XR-NTX (Vivitrol) for ALCOHOL USE DISORDERS



Treatment Dose	1	2	3	4	5	6
No. of Patients						
Placebo	209	194	169	160	142	134
Naltrexone						
190 mg	210	187	169	156	144	137
380 mg	205	186	161	147	139	130

GarbuttJC, JAMA 2006

How can your Drug Court Use MAT therapeutically?

- Educate your team – and Continue to learn!
- Develop consensus among Team for its use –
  - Agree on the *Meaning* of recovery – it doesn't necessarily mean risking death and suffering debilitating physical withdrawal that can precipitate relapse
- Understand MAT as an aide, not another addiction/ unhealthy dependence. It is NOT a substitution-- it's a transition support for the body toward recovery
- Establish precautions to prevent misuse or diversion
- Establish cooperation with prescribing physicians

Narcan available without a prescription in Idaho

- As of July 1, 2015, Idaho's law established that pharmacists — not just physicians, nurse practitioners and physicians assistants — can prescribe Narcan (and related Naloxone medications) to members of the public without a prescription
- In October 2016, Safeway pharmacists became first large outlet in ID to implement this law
- "Pre-arrival" (before EMT) Narcan use saves lives

MAT Implementation Checklist

http://www.integration.samhsa.gov/clinical-practice/mat/MAT_Implementation_Checklist_FINAL.pdf

Assess The Treatment Environment

- Which treatment programs in your state/area currently use medications in the treatment of addictions?
- If there are no programs in your state/area using medications in addiction treatment, why not?
  - Are there attitudinal problems?
  - Are there Medication cost concerns?
  - Are there Implementation cost concerns?
  - Are there state regulations and policy barriers?
- Who will provide the leadership to address these barriers?
- How do you plan to assess which treatment programs are most likely to work with you (i.e., early adopters) to adopt medication assisted treatment?
- For treatment programs that use medications, how do you access physicians? Are they:
  - Full or part-time staff members?
  - Contracted?
  - Affiliated with a primary care clinic?
  - Affiliated with or embedded in a health center/FQHC?
- Do health centers and other providers have an appropriately trained integrated care team available?
- Are any treatment programs co-located with health centers? If so, where are they specifically located? If there are none, what do you need to do to have medical care and behavioral health care provided on the same site?
- What can you do to support the development of networks of treatment providers that include both primary care providers and addiction treatment programs?
- Are there any comprehensive treatment programs in your state that include primary care within an addictions treatment program? Is the primary care program co-located and under different management or part of the addictions treatment program? How can these different organizational structures serve as models for other addictions treatment programs?
- How will you work with medical and non-medical clinicians to assure that counseling services accompany use of medications in addictions treatment?

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Medication-Assisted Treatment for Opioid Use Disorders in Drug Courts

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Ensuring the Safe, Effective, and Responsible Use of Addiction Medications for Drug Court Participants

A substantial proportion of adult drug court participants have a moderate to severe opioid[1] use disorder. In a 2014 survey of all state and territorial drug court coordinators in the United States, opioids were ranked as the primary substance of abuse in approximately 20% of adult urban drug courts and in just over 30% of rural and suburban drug courts (Marlowe, Hardin, & Fox, 2016). In a 2013 online survey of more than 100 drug courts in 47 U.S. states and territories, nearly half (48%) of the drug courts reported that more than 20% of their participants were dependent on opioids, and an additional 20% of drug courts reported that between 10% and 20% of their participants were dependent on opioids (Matusow et al., 2013).

Implementation: current treatment realities

- Buprenorphine, Buprenorphine-Naloxone (Suboxone, Zubsolv)
  - any provider with an 'X' DEA#...can only enlist 100 patients per MD
  - Office - or program-based prescribing
  - the most common form of opioid medication treatment in US
- Methadone
  - only available at an licensed Opioid Treatment Program (OTPs)
  - more stigma
- XR-Naltrexone (Vivitrol)
  - only recently FDA approved
  - most expensive costs per month
  - antagonist requires patient to detox first…the 'detox hurdle'

Implementation:
Which medications to use? For which patient?

Use the MAT CHECKLIST to Determine:

- Is there a methadone provider in the county?
- Is there a buprenorphine provider? Reimbursement?
- Is there coverage/reimbursement for selected medication?
- What is the patient motivated for?

- *…any type/choice of MAT is likely to be more effective than none*
- To date, no well-defined criteria **dictate** which medication should be used for which patient.
- A specific assessment must be done with each patient.

Prescribing Medications

- **Misuse/Diversion/Abuse/Addiction are inherent risks of prescribing controlled substances**
- **A risk assessment has to be conducted for *a specific patient* at *a specific time***
- **All patients prescribed controlled substances should be assessed at each visit for signs of misuse or addiction**
- **Ask questions using a matter-of-fact and non-threatening manner**

References & Resources

http://www.naabt.org/documents/TimeForChangeNAABT.pdf

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The Neurobiology of Opioid Dependence: Implications for Treatment, Thomas Kosten, MD, Tony George, MD
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2851054

Naltrexone Information Sheet
http://familydoctor.org/online/famdocen/home/common/addictions/alcohol/130.html