

Medication Assisted Treatment (MAT): A Component of Comprehensive Treatment for Substance Use Disorders

Tennessee Substance
Exposed Infants (SEI)
Neonatal Abstinence
Syndrome (NAS)
Workgroup





Presentation Overview

- Substance Use Disorders
- Medication Assisted Treatment (MAT) as part of an Evidence-based, Holistic Treatment Approach
- MAT during Pregnancy, Post-Natal and Beyond
- Considerations for Child Welfare Policy and Practice
- Discussion
- Resources





Substance use Disorders are Complex and Generally Begin Early in Life!

- No child writes their essay on what they want to be is an alcoholic or drug addict
- No one wakes up one day and says ... today's a great day to develop a brain disorder that risks my health, family, job, future, freedom and possibly life
- Yet – in the time we are together today, 180 people will die of addiction





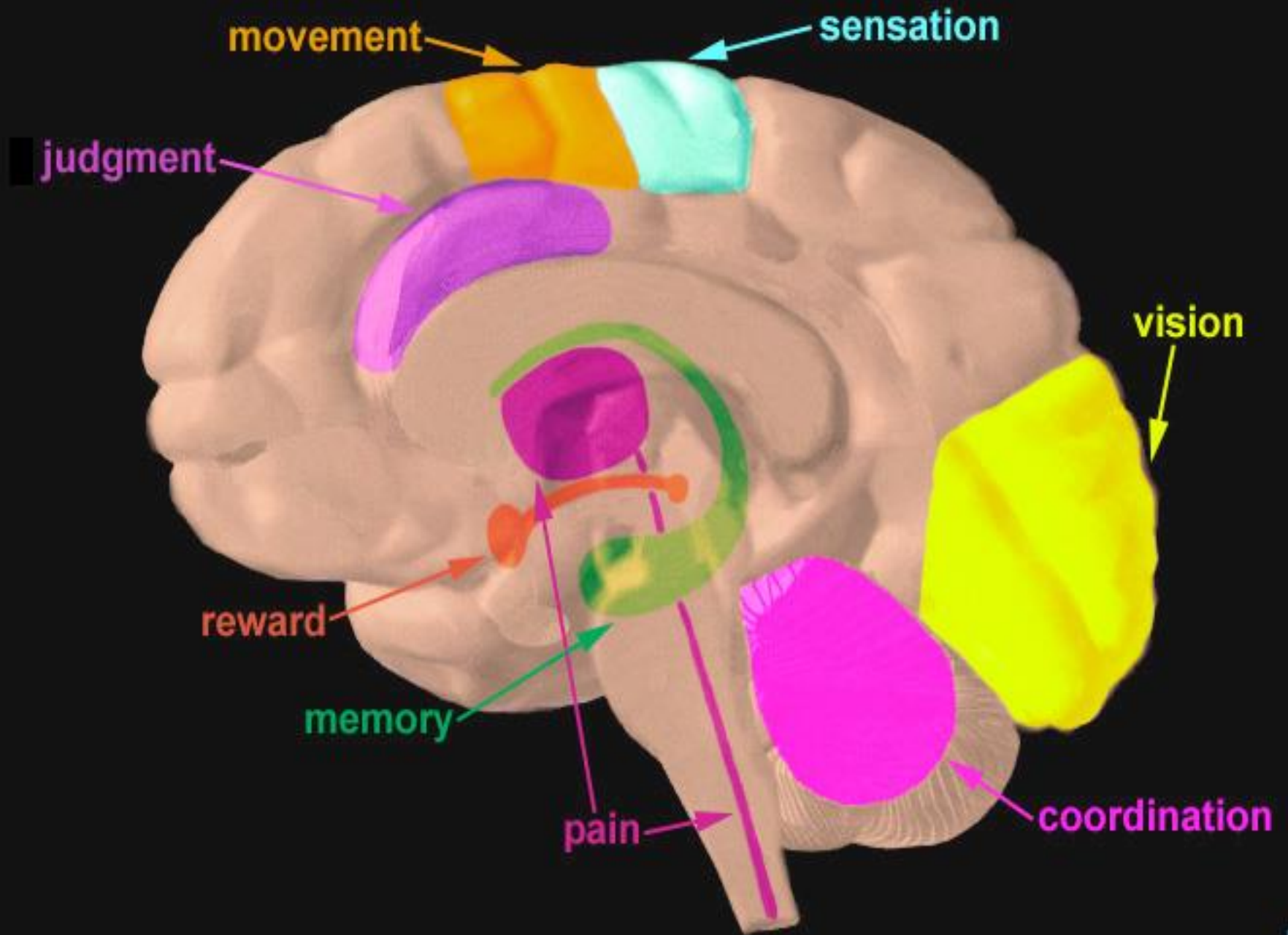
It is also a Developmental Disorder

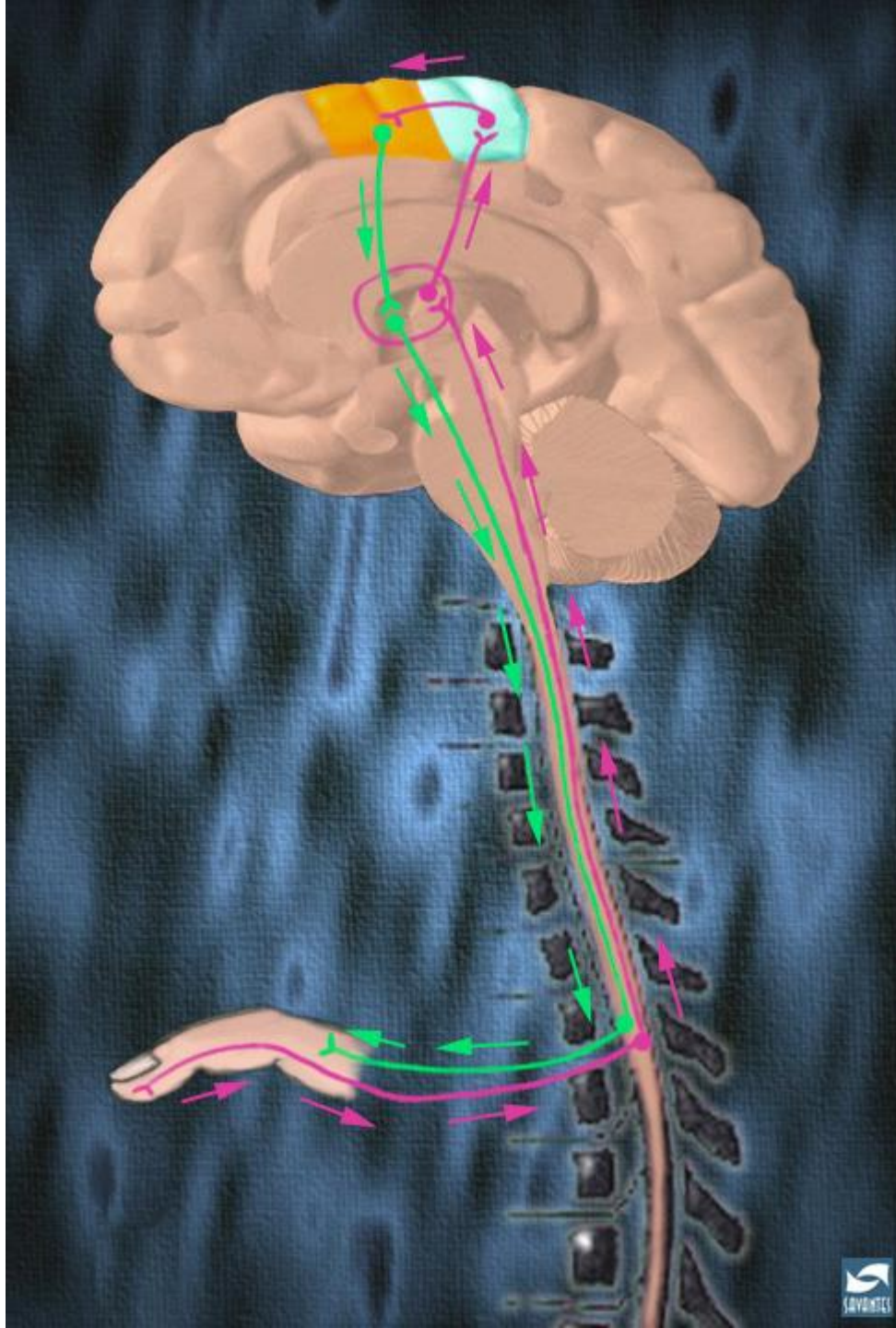
- The vast majority of addiction begins in adolescence as teens experiment, and for a critical few, begin a progression of changed neurochemistry with life-long consequences
- “Addiction is a developmental disorder of adolescence”
Dr. Nora Volkow, Director
National Institute on Drug Abuse (NIDA)
- The changing circuitry of teenagers' brains appears to leave them especially vulnerable to the effects of drugs and alcohol



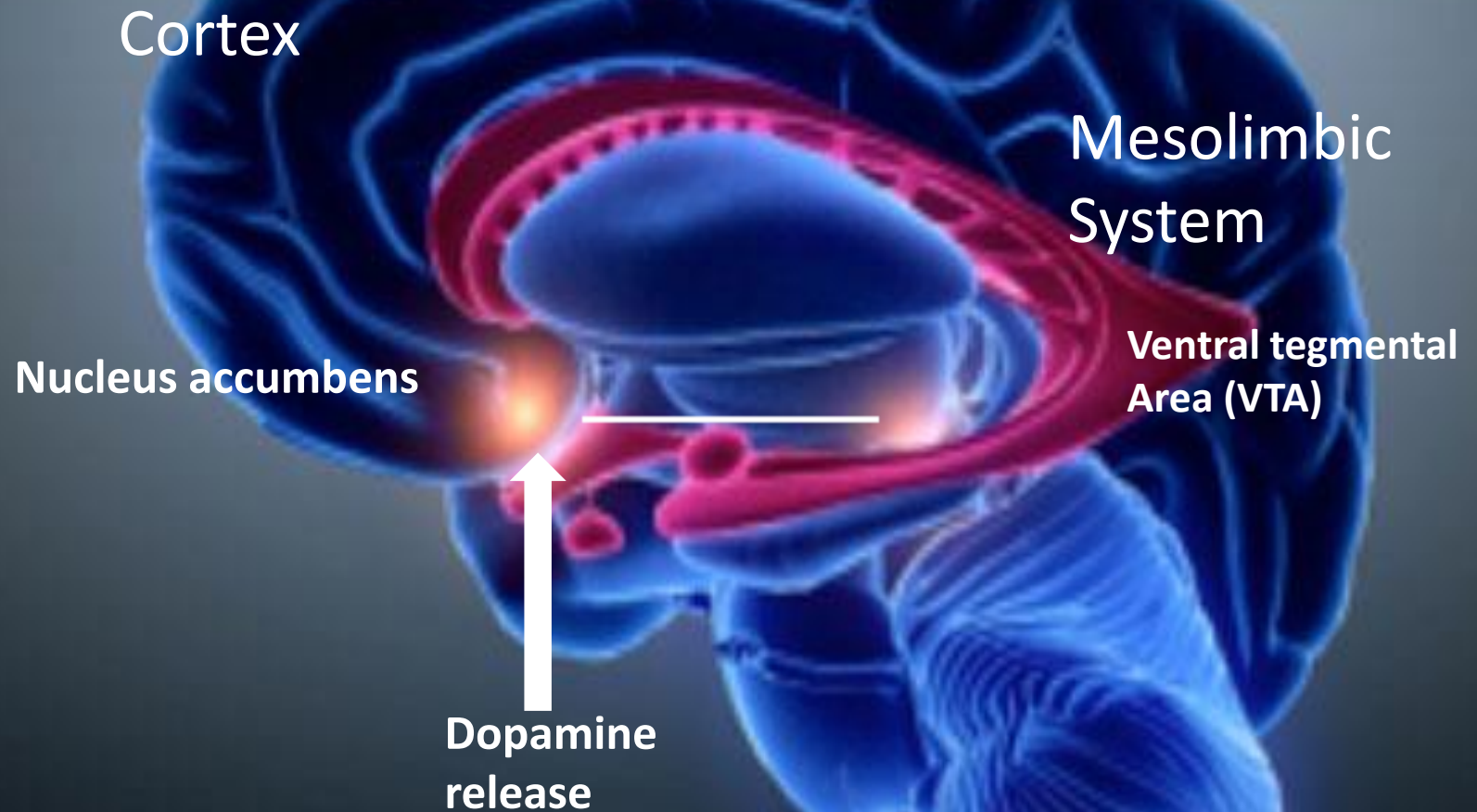
Introduction to the brain







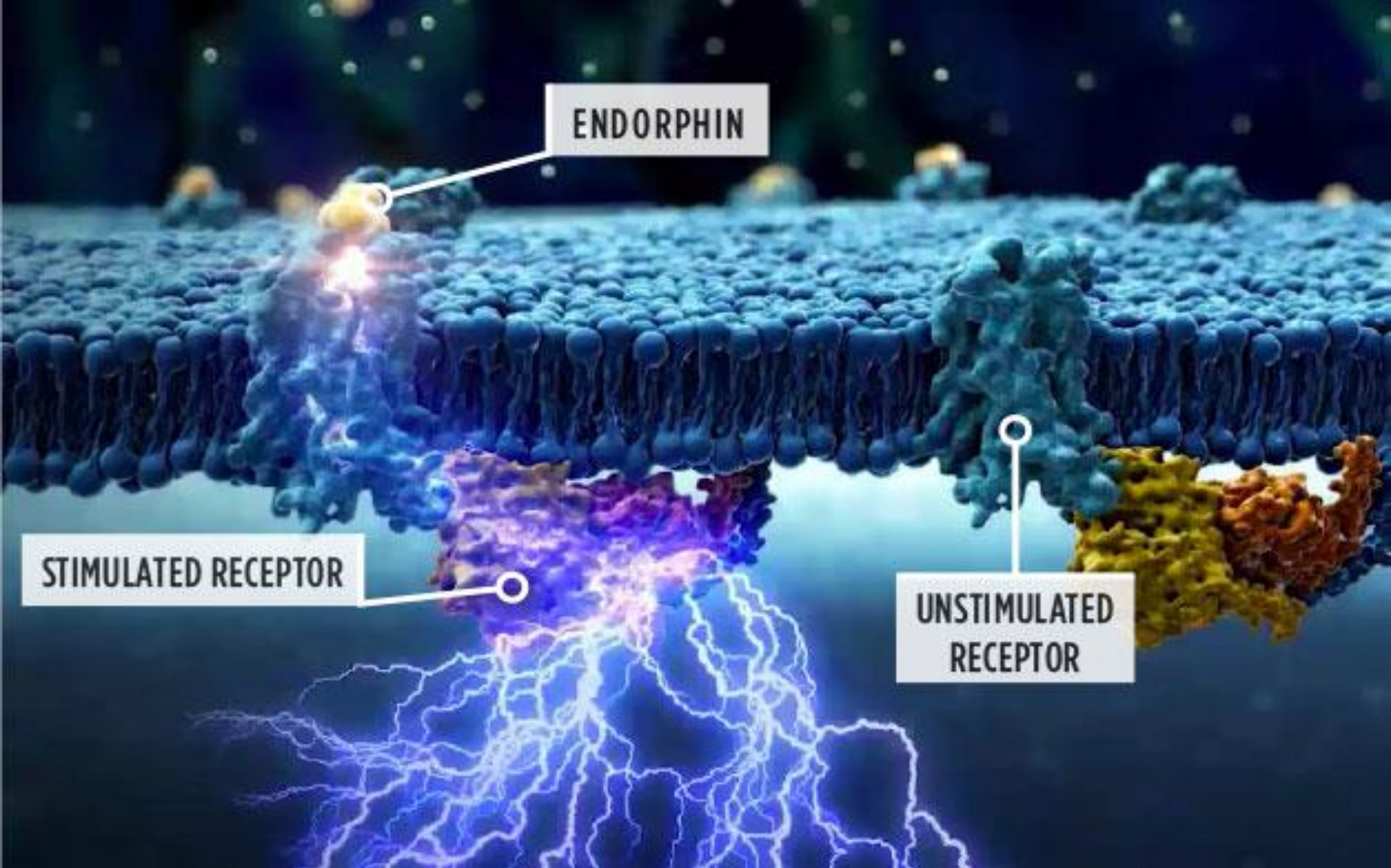






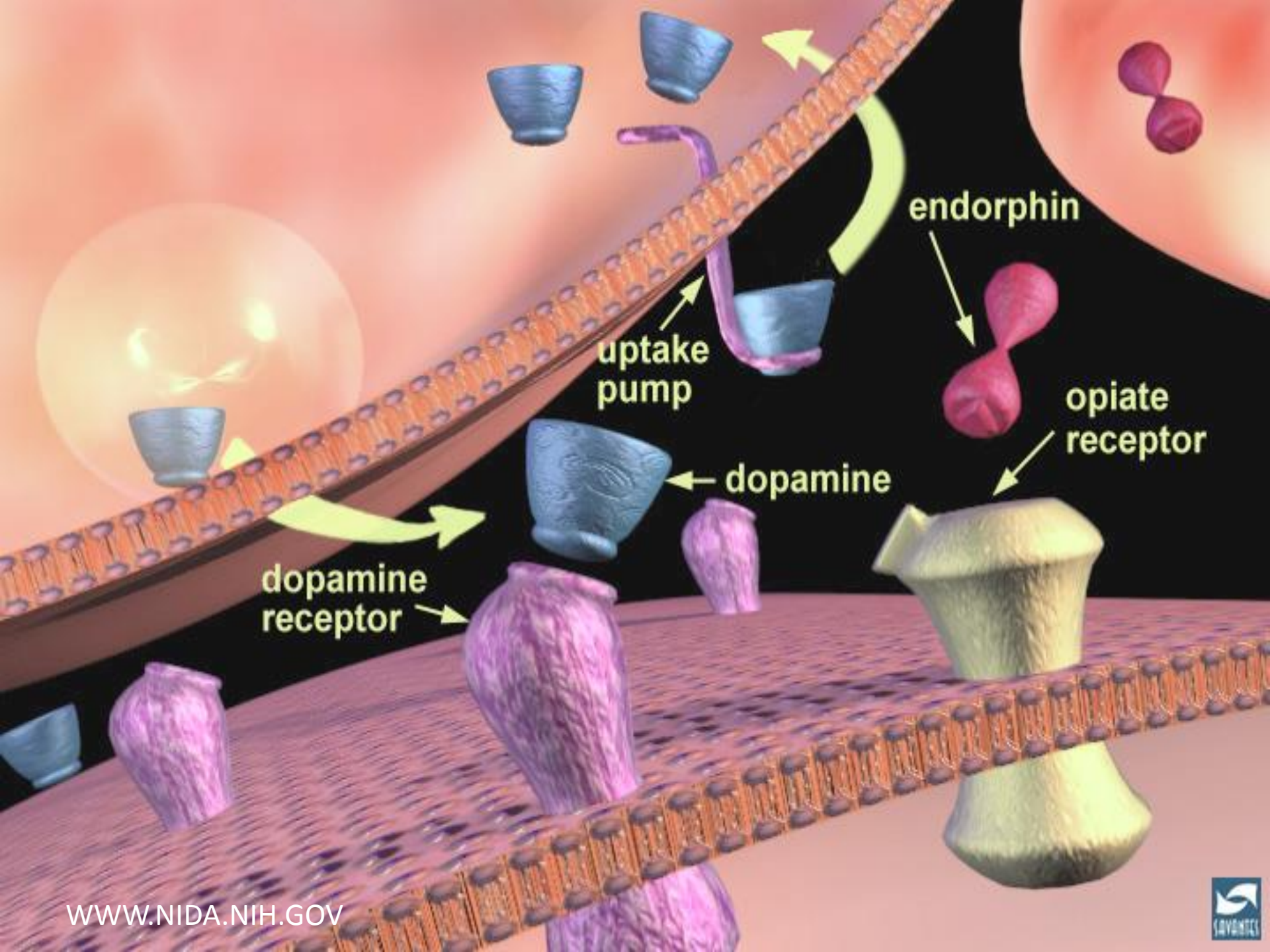
DOPAMINE

When the receptors are unlocked, they release neurotransmitters including dopamine in the brain. Dopamine gives you a good feeling to reward you for doing something you enjoy. This reward is what makes you want to repeat these behaviors.
<http://www.vivitrol.com/opioidrecovery/howvivitrolworks>



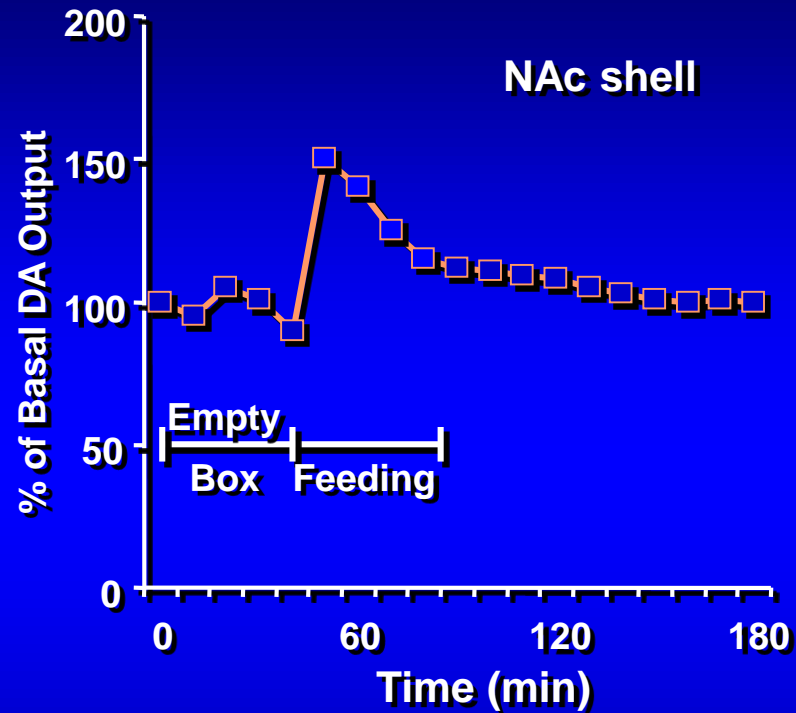
When that activity is something you enjoy, your brain releases chemicals called endorphins that make you feel good. Endorphins attach to receptors – much like a key fitting into a lock – and unlock the receptors.

<http://www.vivitrol.com/opioidrecovery/howvivitrolworks>



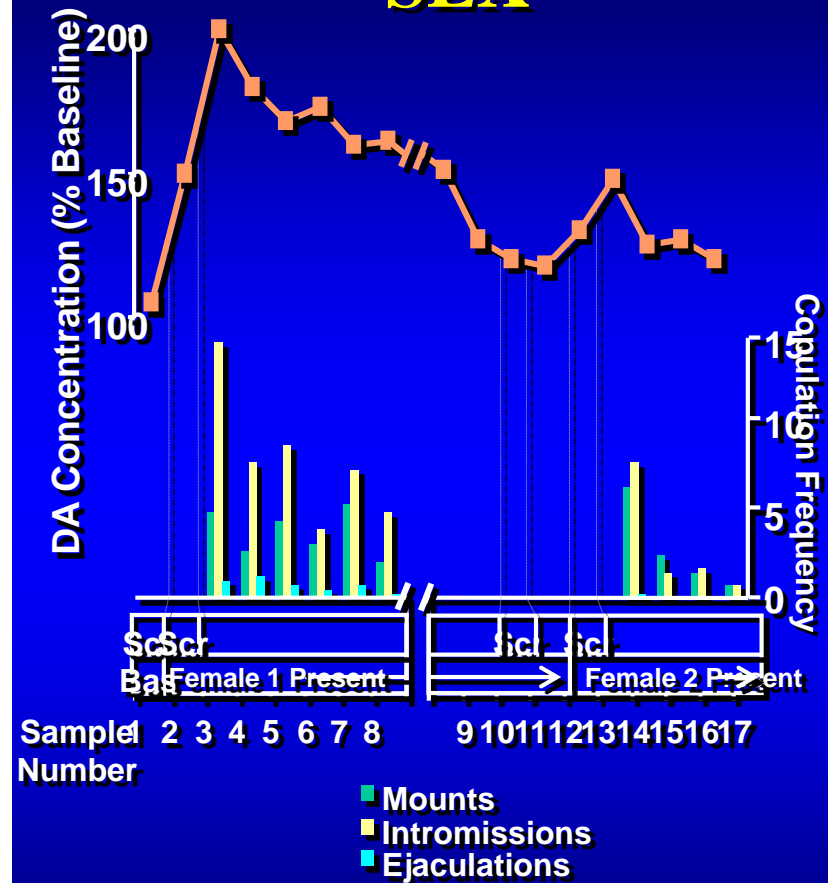
Natural Rewards Elevate Dopamine Levels

FOOD



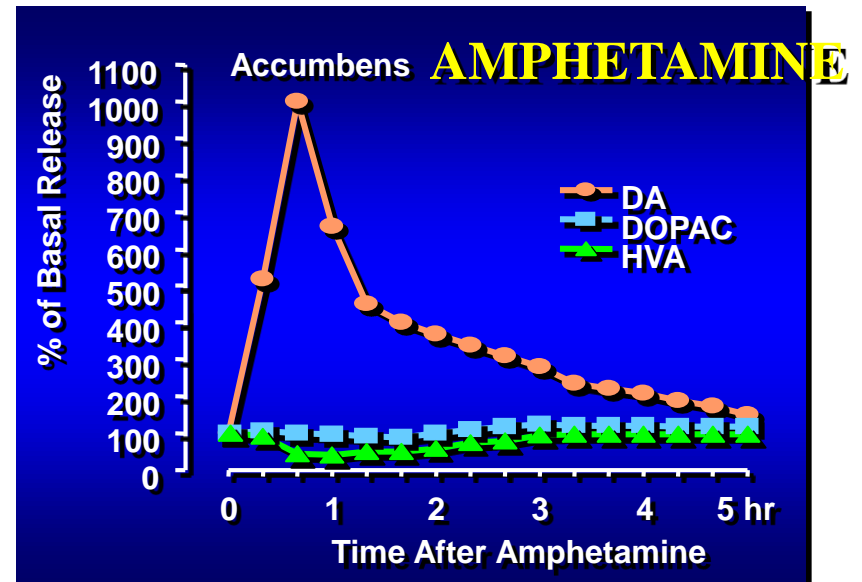
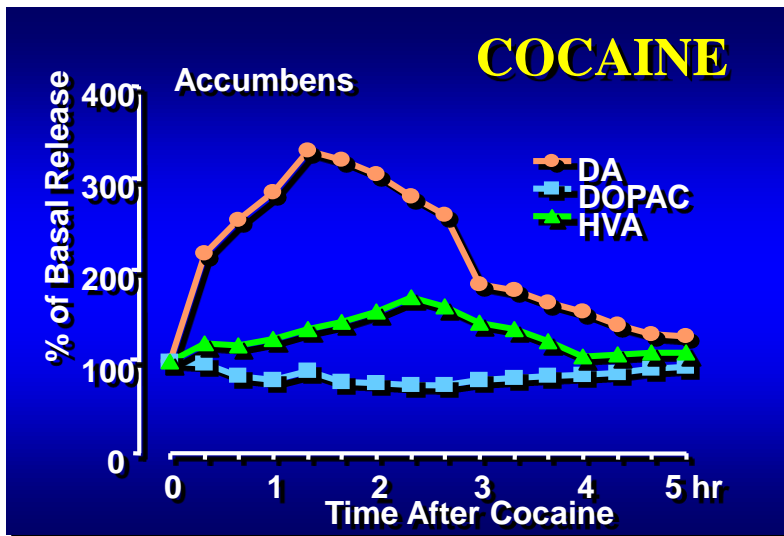
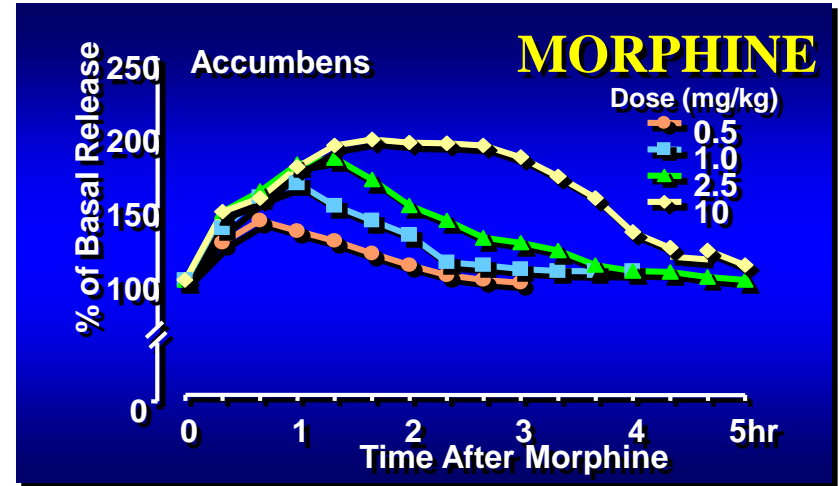
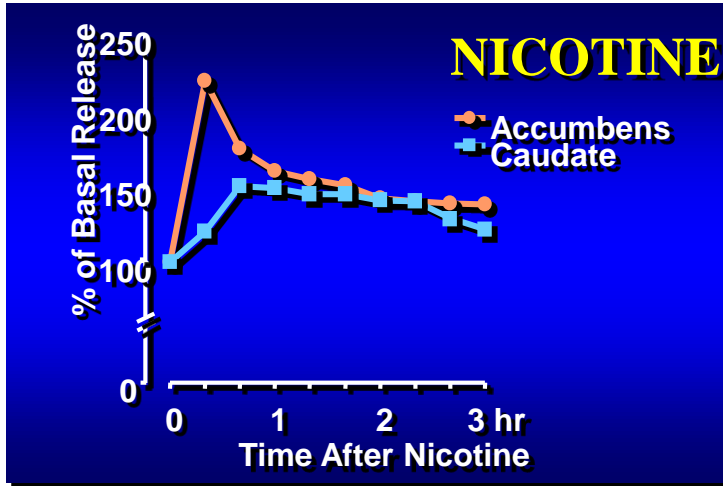
Source: Di Chiara et al.

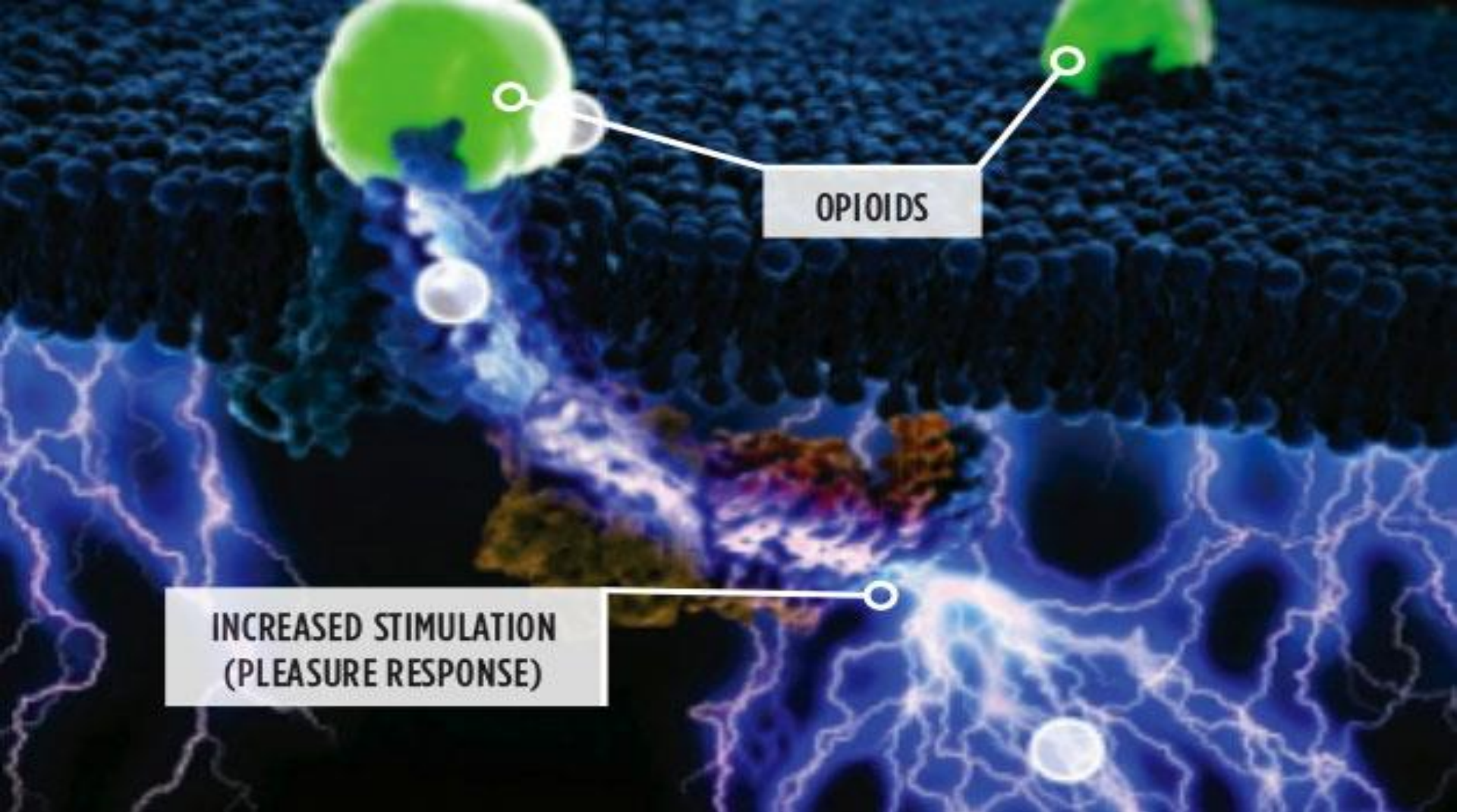
SEX



Source: Fiorino and Phillips

Effects of Drugs on Dopamine Levels





When you take opioid street drugs such as heroin or opioid pain medications (e.g. VICODIN®, Percocet® and OxyContin®), they attach to a particular type of receptor. This results in the release of greater amounts of dopamine, which creates a pleasure response or reward.

VICODIN® is a registered trademark of Abbott Laboratories; Percocet® is a registered trademark of Endo Pharmaceuticals;

<http://www.vivitrol.com/opioidrecovery/howvivitrolworks>

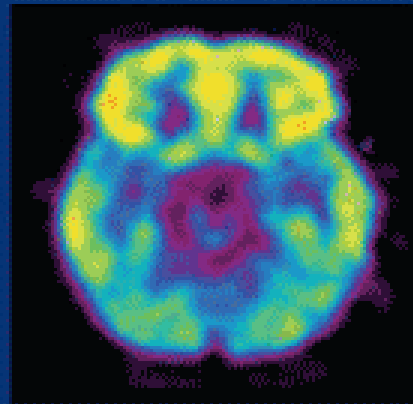


A chronic, relapsing brain disease

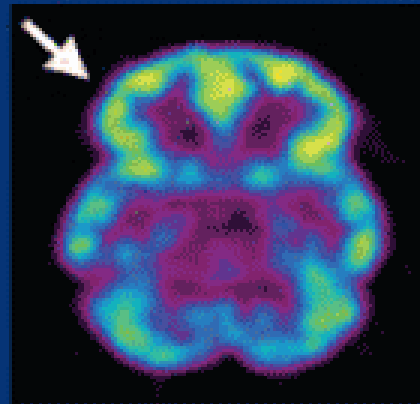
- Brain imaging studies show physical changes in areas of the brain that are critical to
 - Judgment
 - Decision making
 - Learning and memory
 - Behavior control
- These changes alter the way the brain works, and help explain the compulsion and continued use despite negative consequences



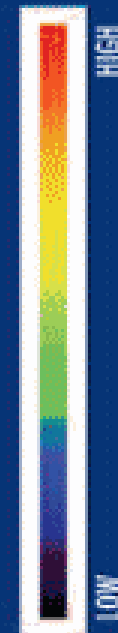
DECREASED BRAIN METABOLISM IN **DRUG ABUSER**



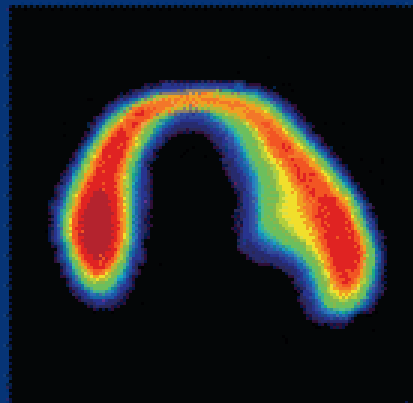
Healthy Brain



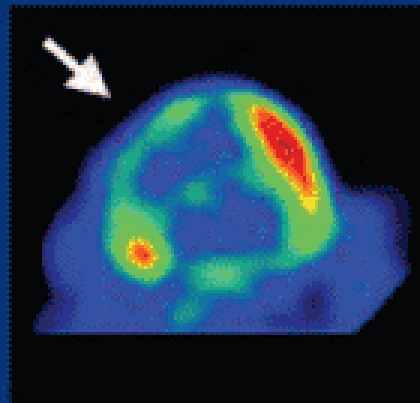
Diseased Brain/Cocaine Abuser



DECREASED HEART METABOLISM IN **HEART DISEASE PATIENT**



Healthy Heart



Diseased Heart

Substance Use Disorders are similar to other diseases, such as heart disease. **Both diseases disrupt the normal, healthy functioning of the underlying organ, have serious harmful consequences, are preventable, treatable, and if left untreated, can result in premature death**



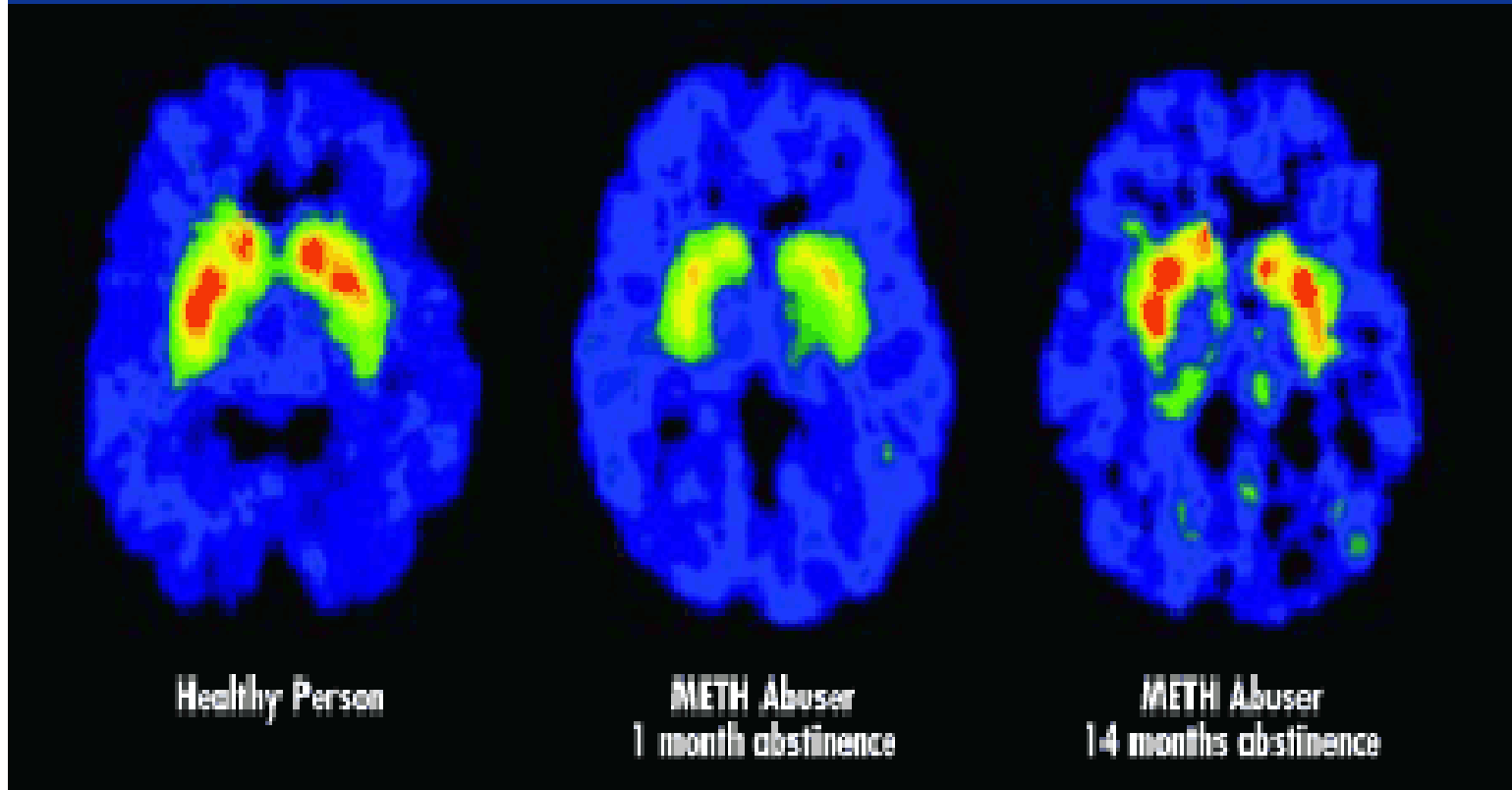
A treatable disease

- Substance use disorders are preventable and is a treatable disease
- Discoveries in the science of addiction have led to advances in drug abuse treatment that help people stop abusing drugs and resume their productive lives
- Similar to other chronic diseases, addiction can be managed successfully
- Treatment enables people to counteract addiction's powerful disruptive effects on brain and behavior and regain areas of life function



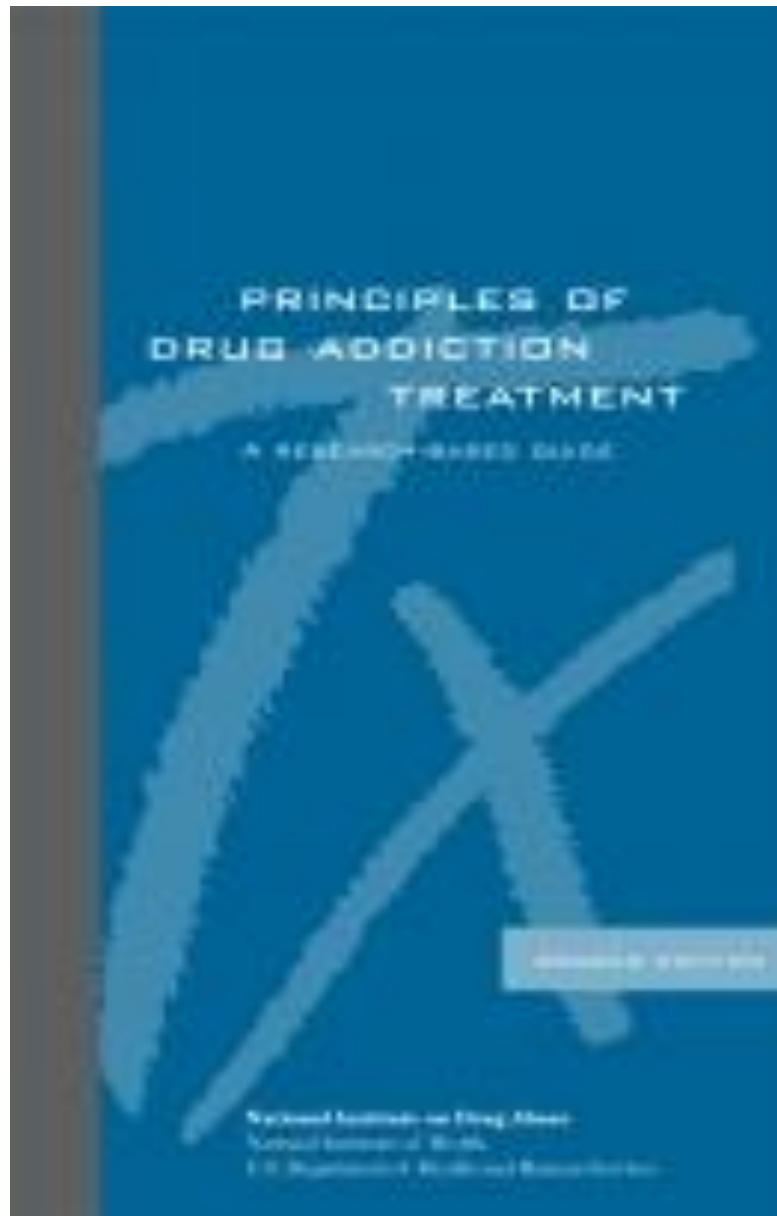


BRAIN RECOVERY WITH PROLONGED ABSTINENCE



These images of the dopamine transporter show the brain's remarkable potential to recover, at least partially, after a long abstinence from drugs - in this case, methamphetamine.⁹





<http://www.drugabuse.gov/publications/principles-drug-addiction-treatment>

PSYCHOLOGICAL EFFECTS

Counseling
targets the
cortex

PHYSICAL EFFECTS

Medication
effects the
limbic region



- **Medications are an important element of treatment for many patients, especially when combined with counseling and other behavioral therapies**
 - National Institute on Drug Abuse, Principles of Drug Addiction Treatment

Recent review by American Society of Addiction Medicine and National Institute on Drug Abuse

Advancing Access to Addiction Medications: Implications for Opioid Addiction Treatment

<http://www.asam.org/docs/advocacy/Implications-for-Opioid-Addiction-Treatment>





Three FDA-approved Medications for Opioid Addiction

- Methadone - Dolophine®
 - **Agonist** - binds on the cell and mimics the action of the naturally occurring neurotransmitters
- Buprenorphine – Suboxone,® Subutex®
 - **Partial Agonist** – Similar action as a agonist at lower levels
- Naltrexone oral – ReVia,® Depade®
- Naltrexone extended release injection - Vivitrol®
 - **Antagonist** - Bind to opioid receptors and block them, like a key that fits in a lock but does not open it and prevents another key from being inserted to open the lock





Methadone

- Used successfully for more than 40 years
- Full mu-receptor agonist
 - Can be used in detox and maintenance
 - Suppresses withdrawal and craving and reduces non-medical opioid use
- Prescription and dispensing is restricted to providers licensed DEA, certified by SAMHSA as Opioid Treatment Programs (OTPs) and are subject to state and local regulations
- Commercial health plans do not cover as a pharmacy benefit for opioid addiction, only for pain management





Methadone

- Therapeutic doses, determined by trained physicians, to ensure maximum effectiveness and the receptor is fully activated
- Effectiveness well documented:
 - Withdrawal symptom suppression
 - Patient retention
 - Reduction of opioid use
 - Reduction of opioid-related health and social problems





Methadone

- Access and waitlisted patients are a frequent problem
- Not a “pharmacy” benefit in commercial health plans except for pain management
- Daily doses provided at the clinic till patient stabilization and can receive take-home doses





Buprenorphine

- Available for opioid treatment since 2002 and generic formulations are now available
- Partial *mu*-receptor agonist, also works as a antagonist at the *kappa* receptor
 - Activates some receptors with a *ceiling effect* even with an increased dose; antagonist “occupies” the receptor and blocks
- Combination product with short-acting antagonist naloxone was developed to prevent misuse
- Can be used for detox and maintenance
- Two advantages over methadone: overdose risks are far lower and it is far more accessible
- Available from specially trained primary and generalist physicians who are granted a DEA waiver





Buprenorphine in Tennessee

- Medicaid
 - Requires prior authorization
 - Counseling is required for Medicaid benefit
 - Has a maximum daily dose of 8 mg after 6 months of treatment (only TN and MS have this restriction)
- Some commercial insurance plans place specific restrictions
 - Prior authorization, Phases of treatment and dispensing requirements, co-pay variation, timing limits, quantity limits

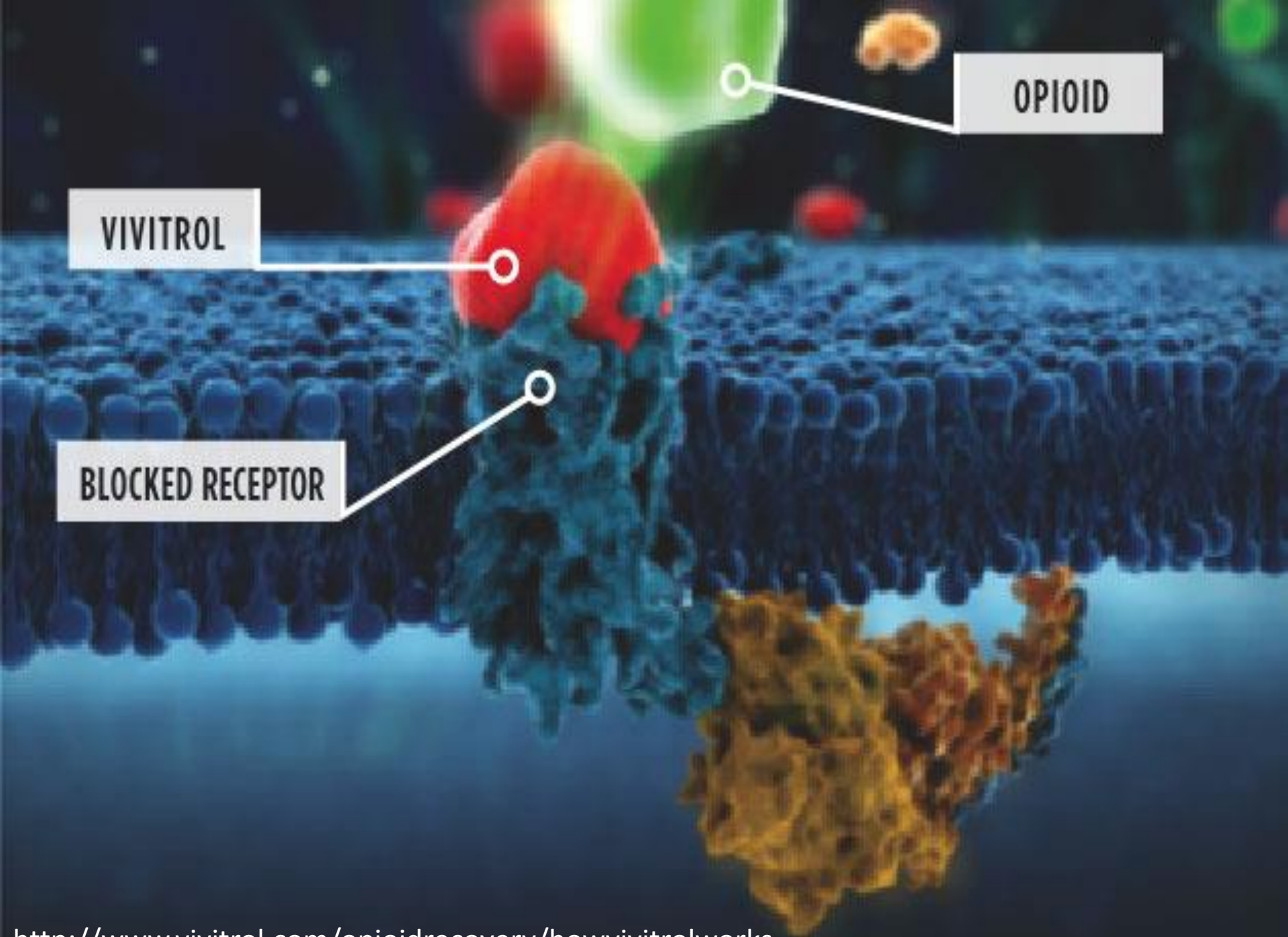




Naltrexone

- Oral form approved in 1984, long acting (24 to 30 hours) antagonist
- Extended release (up to 30 days) injectable form (Vivitrol) approved 2010
- Can only be used with fully detoxified patients, causes immediate withdrawal if opiate still in system
- Once on maintenance dose, eliminates effects of opioids by blocking the receptor sites
- Good access as it is prescribed by any healthcare provider who is licensed to prescribe medications (e.g., physician, doctor of osteopathic medicine, physician assistant, and nurse practitioner).
- Special training is not required; the medication can be administered in OTP clinics





OPIOID

VIVITROL

BLOCKED RECEPTOR



Outcomes

- Positive outcomes with adherence but oral form does have higher lack of adherence and discontinuation problems
- Studies have shown about 50% of patients voluntarily continue the injectable forms
- Vivitrol is being used post release from jails and prisons to prevent overdose deaths
- In other countries, studies underway on an implant form





Naltrexone in Tennessee

- Medicaid coverage for both oral and injectable
 - Requires prior authorization
 - Reported to have strong support from Medicaid and Criminal Justice agencies





Medications Approved for Alcohol

- **Acamprosate – Campral**
 - Antagonist at N-methyl-D-aspartate receptors and agonist gamma-aminobutyric acid (GABA) type A receptors
 - Reports indicate that acamprosate only works with a combination of attending support groups and abstinence from alcohol
- **Disulfiram – Antabuse**
 - Produces an acute sensitivity to alcohol by blocking the processing of alcohol in the body by inhibiting the break down of enzymes acetaldehyde dehydrogenase causing an unpleasant reaction when alcohol is consumed.
- **Naltrexone – Revia, Depade and extended release Vivitrol**
 - An opioid receptor antagonist





Other medications for alcohol

- Some benzodiazepines (Valium and Xanax) have been approved to treat alcohol withdrawal symptoms





Medications for Nicotine

- Nicotine replacement products
 - Patches, Gum, Lozenges, Nasal Spray
- Oral medication
 - Bupropion
 - Wellbutrin, Budeprion, Prexaton, Elontril, Aplenzin
 - Varenicline
 - Chantix
- Are effective components of treatment when part of a comprehensive behavioral treatment program





Summary Points

As part of a comprehensive treatment program, MAT has been shown to:

- Improve survival
- Increase retention in treatment
- Decrease illicit opiate use
- Decrease hepatitis and HIV seroconversion
- Decrease criminal activities
- Increase employment
- Improve birth outcomes among opioid dependent pregnant women





Summary Points

Medical doctors determine the appropriate type of medication, dosage and duration based on each patient's

- Biological makeup

- Addiction history and severity

- Life circumstances and needs

- Decisions to discontinue medications in particular require medical consultation

Each medication varies in its ability to

- Prevent or reduce withdrawal symptoms

- Prevent or reduce drug craving



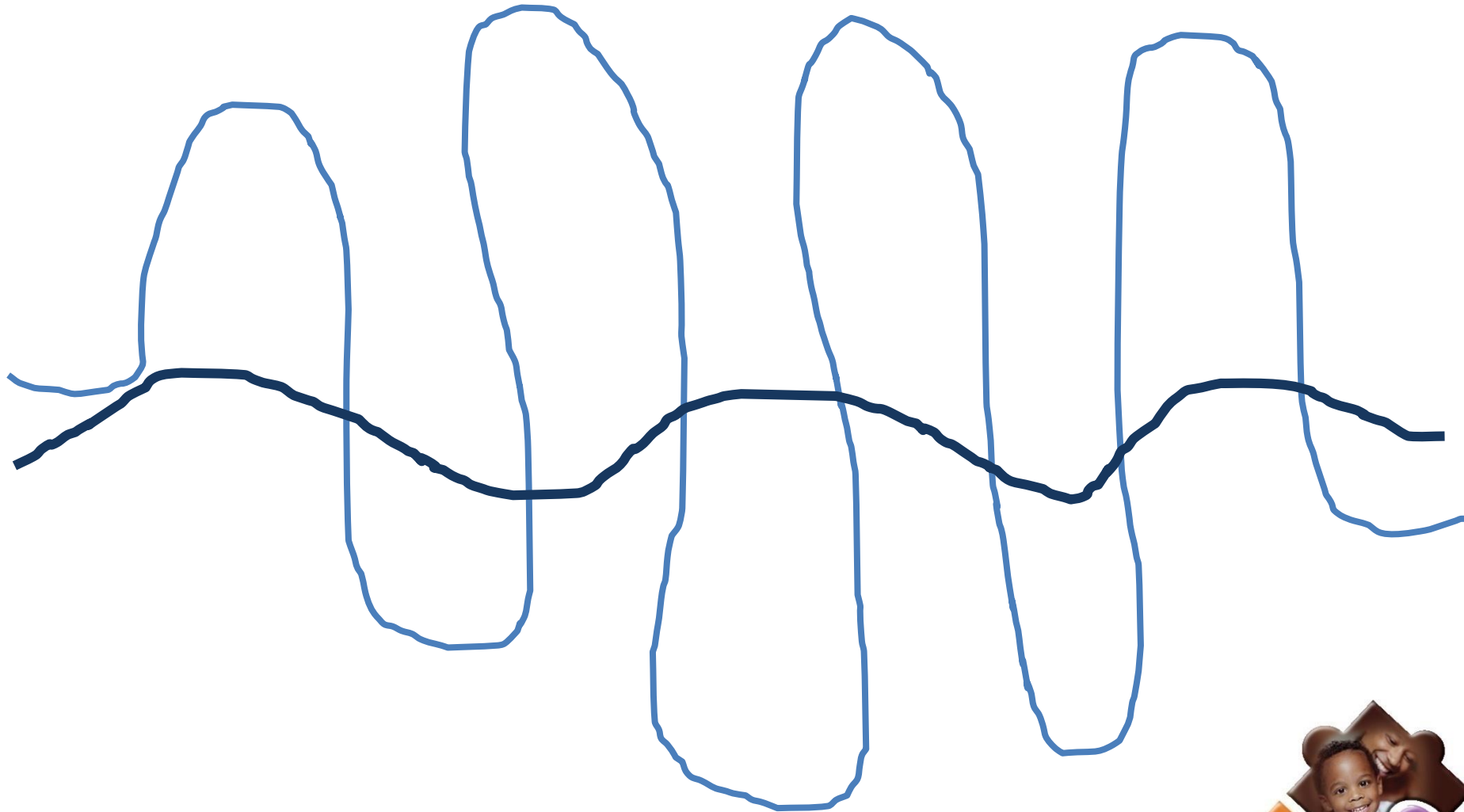


- MAT during Pregnancy, Post-Natal and Beyond





Opiates during Pregnancy





Opioid Use During Pregnancy

- Fetal growth retardation
- Abruptio placentae
- Fetal death
- Premature labor
- Intrauterine passage of meconium
- These may be related to exposure to the fetus or the effects of withdrawal on placental function
- Lifestyle risks





Neonate Withdrawal/Neonatal Abstinence Syndrome (NAS)

- In chronically opioid exposed newborns, norepinephrine “rebound” produces symptoms of gastrointestinal and motoric hyperarousal after birth as opioids are no longer being administered through the umbilical connection to the mother and are metabolized
- 40-60% of exposed babies have NAS signs & researchers cannot predict which ones will have it
- Timing of onset relates to characteristics of drug used by mother, time of last dose
- Generally treated in hospital via swaddling, low stimulation environment, extra feedings, narcotic weaning





Different Populations of Women Can Give Birth to an Infant with NAS Symptoms*

1. Women with chronic pain or other medical condition maintained on medicines
2. Women actively abusing or dependent on opioids (e.g. untreated substance use disorder)
 - Includes heroin users
 - Misuse own prescribed narcotics for acute or chronic pain
 - Misuse of non-prescribed opioids diverted from legitimate sources from friend or family member
 - Misuse of opioids obtained through illicit means (purchased, theft)
3. Women in recovery from opioid addiction maintained on methadone through OPT or buprenorphine through office based prescribing

*Groups may overlap, adapted from Dr. Cece Spitznas, White House Office of National Drug Control Policy

Summary Statements from a National Panel Science and Nursing

Opioid exposure is costly & emotionally difficult to witness but not new;

Extent of problem is expected to change with changes in the prescription drug addiction epidemic;

Preliminary results of study on cognitive outcomes for children on a steady maintenance dose of opioids appear within normal limits at age 3

Summary Statements from a National Panel

Law, Policy, Media

- Research shows child welfare response varies greatly across jurisdictions
- There is a need to examine and possibly provide technical assistance to states concerning CAPTA – Child Abuse Prevention and Treatment Act-Possible Barrier to SBIRT/prenatal care
- Response by justice, treatment and medical systems a concern in some jurisdiction (anecdotes of women denied access to methadone)

Summary Statements from a National Panel

Evidence Based Approaches

- Prescription Drug Monitoring Programs (PDMPs) for starting the conversation on controls
- Buprenorphine & Methadone essential treatment tools
- Women have multiple needs including Family Based Treatment
- Incentives targeting Smoking Cessation for pregnant women can affect factors known to influence NICU costs (e.g. birth weight) ¹.
- Indirect Assessment/Computerized SBIRT has potential for women to be triaged and treated without (or w/less) stigma
- Community Reinforcement and Family Training (CRAFT) approach by family members may valuable to get reluctant pregnant patients to go to treatment

1. Higgins ST, Bernstein IM, Washio Y, Heil SH, Badger GJ, Skelly JM, Higgins TM, Solomon LJ. Effects of smoking cessation with voucher-based contingency management on birth outcomes. *Addiction*. 2010 Nov;105(11):2023-30. doi: 10.1111/j.1360-0443.2010.03073.x. Epub 2010 Sep 15.

American College of Obstetrics and Gynecology (ACOG), May 2012

- Opioid use in pregnancy is not uncommon
- Use of illicit opioids during pregnancy is associated with an increased risk of adverse outcomes
- Current standard of care for pregnant women with opioid dependence is referral for opioid-assisted therapy with methadone
- Emerging evidence suggests that buprenorphine also should be considered
- Medically supervised tapered doses of opioids during pregnancy often result in relapse to former use
- Abrupt discontinuation of opioids in an opioid-dependent pregnant woman can result in preterm labor, fetal distress, or fetal demise

American College of Obstetrics and Gynecology (ACOG), May 2012

- During the intrapartum and postpartum period, special considerations are needed for women who are opioid dependent to ensure appropriate pain management, to prevent postpartum relapse and a risk of overdose, and to ensure adequate contraception to prevent unintended pregnancies
- Patient stabilization with opioid-assisted therapy is compatible with breastfeeding
- Neonatal abstinence syndrome is an expected and treatable condition that follows prenatal exposure to opioid agonists



Considerations for Child Welfare Policy and Practice





Questions to be Addressed

Child Welfare Involvement with the Family

- When can DCS open a case? Prior to birth? At Birth?
- Is the intake and assessment process different if the mother is known to child welfare and is stable on MAT prior to birth vs. a referral due to positive drug screen at birth?
- How does DCS assess for the various ways the baby was exposed?
- How does child welfare assess for a plan of safe care in the case of a mother on MAT?
- Are there communication systems in place between hospitals, child welfare, treatment, community supports?
- How does the use of MAT relate to child safety?
- Who makes clinical decisions regarding dosing?





Questions to be Addressed

Interventions

- What are the criteria for keeping the infant with the mother and what are the criteria for removal?
- Does removal criteria differ in the case of a woman using MAT vs. non-MAT treatment? If yes, why and how does it differ?
- If a child is removed, what are the criteria for reunification? Does it differ for MAT vs. non-MAT treatment? If yes, why and how does it differ?
- Is the process different if the mother is known to child welfare and is stable on MAT prior to birth vs. a referral due to positive drug screen at birth?
- When a decision is made to keep the infant in the home or remove the infant, who is this communicated to and how? Are more partners notified in the case of a mother on MAT?
- What is the role of child welfare in connecting the mother to MAT after the birth of the baby?
- Is the use of MAT exclusionary criteria for child welfare programs, particularly Family Drug Courts





Questions to be Addressed

Training

- How are Child Welfare workers trained to understand addiction? MAT?
- Who does child welfare rely on for substance abuse expertise? MAT expertise?
- How are MH and SA staff trained to work with families involved with DCF?
- Are hospital staff trained to recognize, intervene and notify DCS?
- What training is in place for judges, attorneys and court staff?
- Who is trained to create the plan of safe care required by CAPTA?

Data and Outcome Monitoring

- Who is responsible to collect, analyze, report and monitor data across the systems?
- Have key data items to be collected been identified?
- Have policymakers and stakeholders been consulted on data trends and outcomes they need?





Discussion





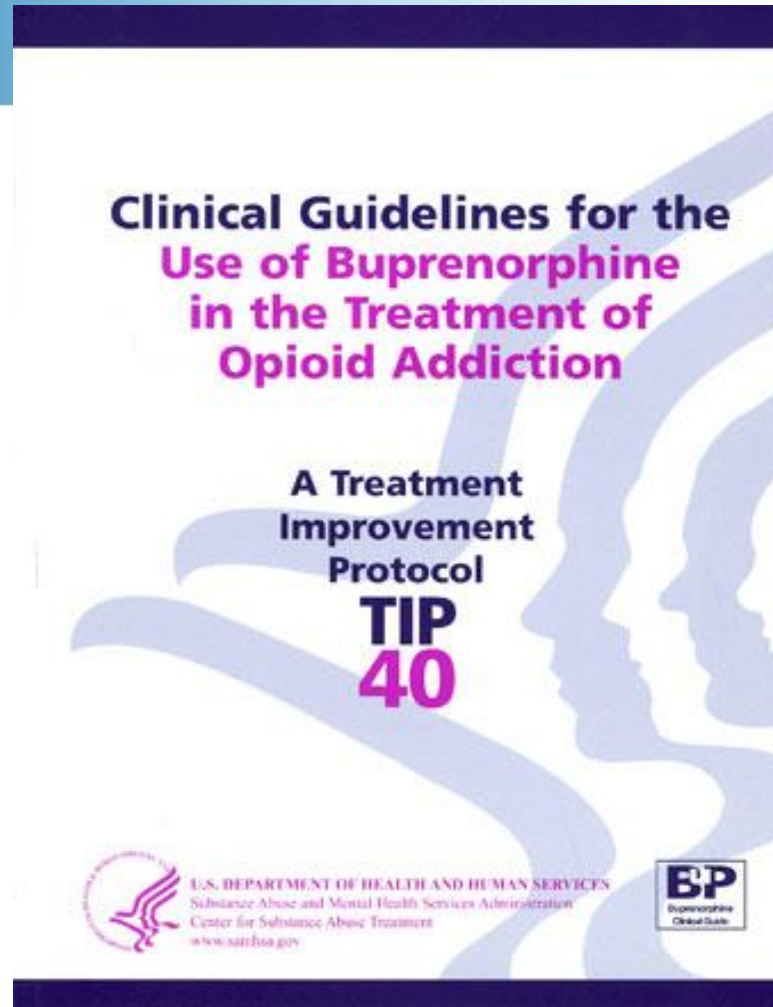
- Resources





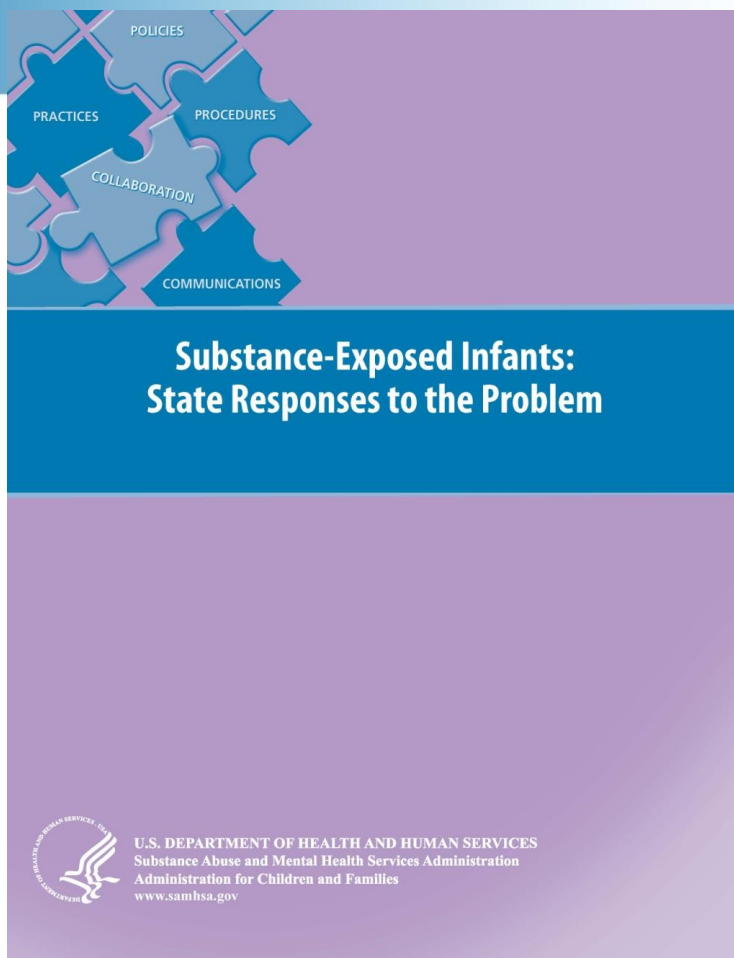
http://www.kap.samhsa.gov/products/trainingcurriculums/pdfs/tip43_curriculum.pdf





<http://store.samhsa.gov/product/TIP-40-Clinical-Guidelines-for-the-Use-of-Buprenorphine-in-the-Treatment-of-Opioid-Addiction/SMA07-3939>



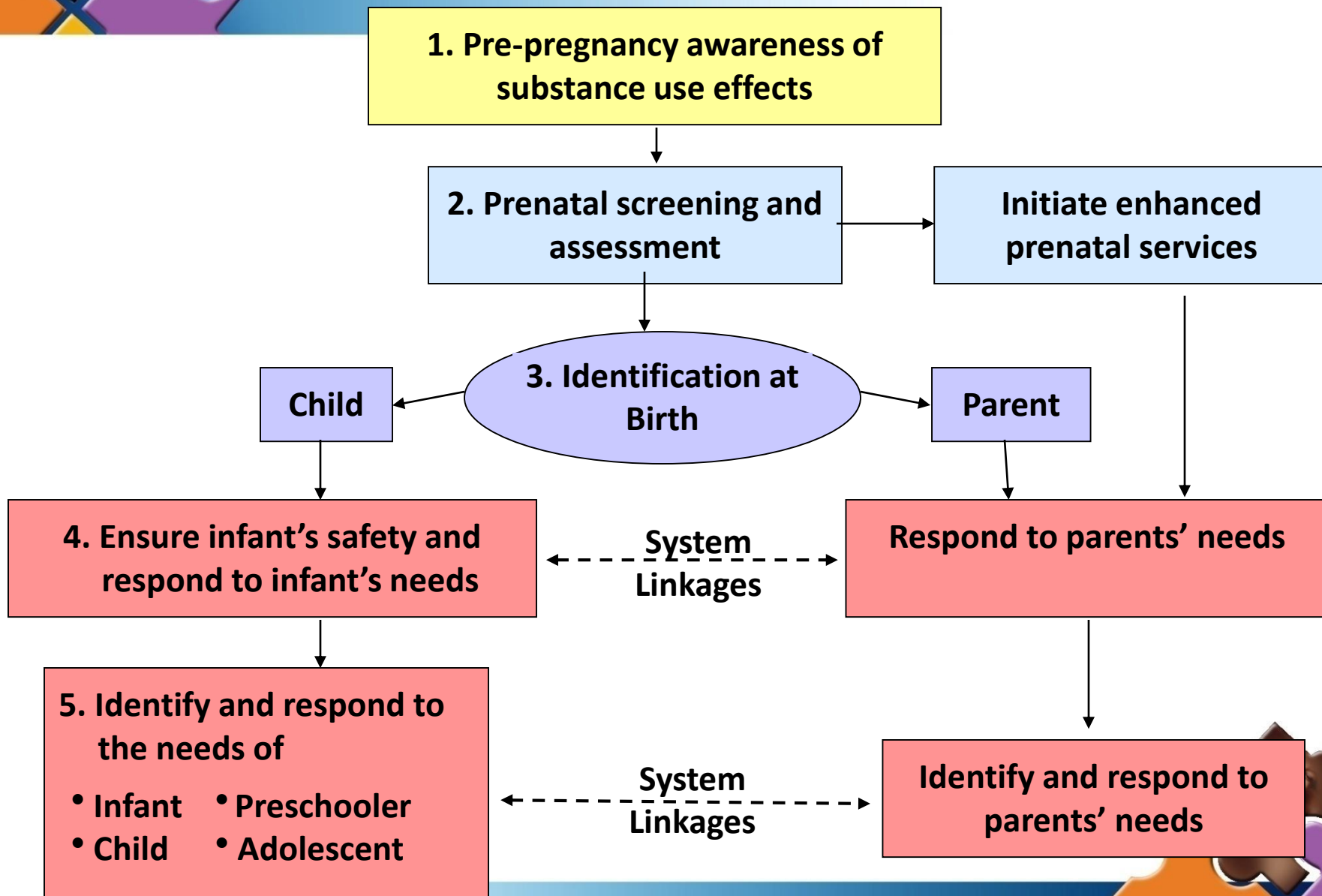


<http://store.samhsa.gov/product/Substance-Exposed-Infants-State-Responses-to-the-Problem/SMA09-4369>





Policy and Practice Framework: Five Points of Intervention





Family-Centered Treatment for Women With Substance Use Disorders: History, Key Elements and Challenges

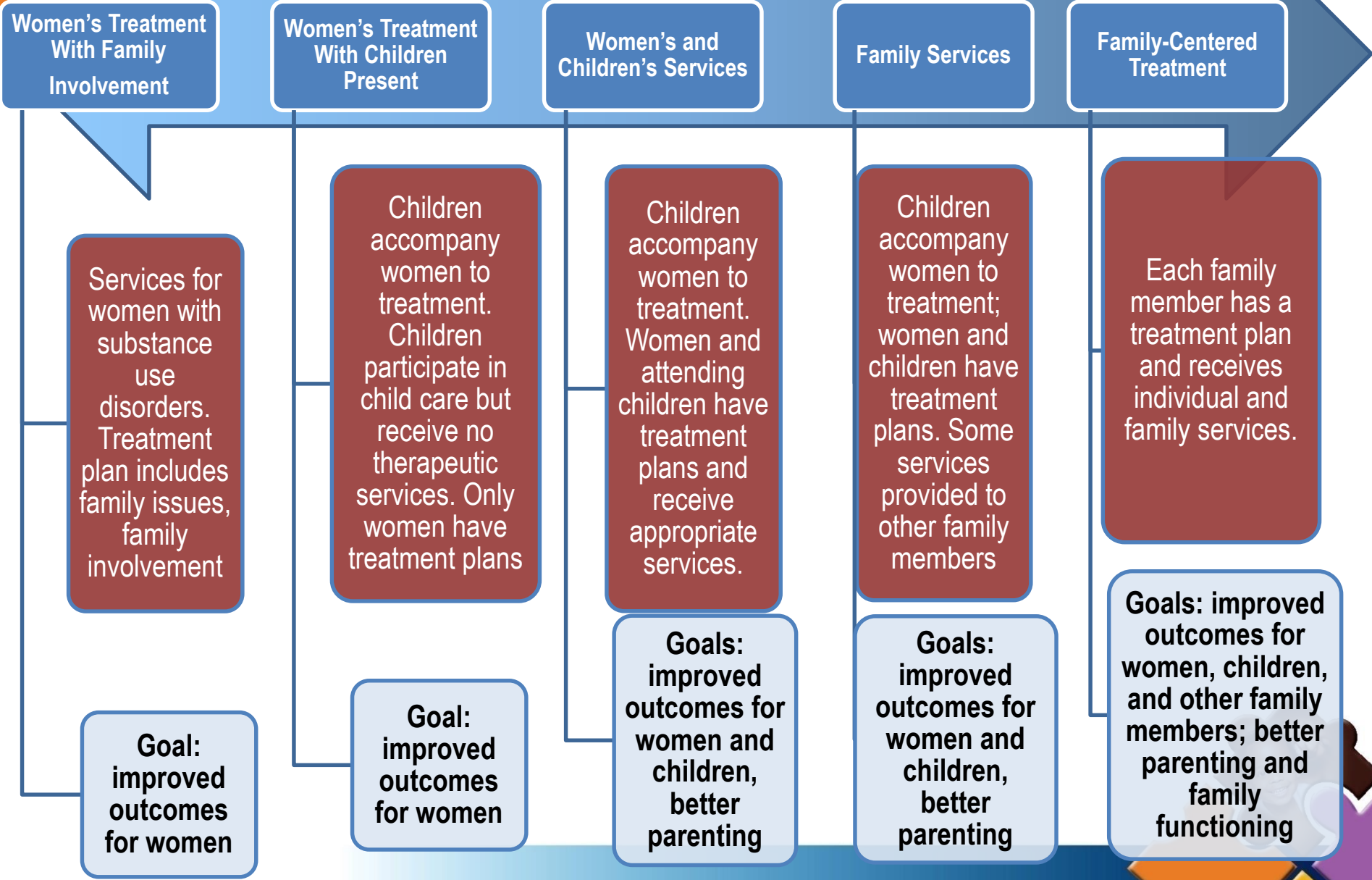


A Life in the Community for Everyone
SAMHSA
Substance Abuse and Mental Health Services Administration
U.S. Department of Health and Human Services

http://womenandchildren.treatment.org/documents/Family_Treatment_Paper508V.pdf



Continuum of Family-Based Services





SCREENING AND ASSESSMENT FOR FAMILY ENGAGEMENT, RETENTION, AND RECOVERY (SAFERR)



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Substance Abuse and Mental Health Services Administration
Administration for Children and Families
www.samhsa.gov

<http://store.samhsa.gov/product/Screening-and-Assessment-for-Family-Engagement-Retention-and-Recovery-SAFERR-/SMA08-4261>





Diagnostic and Statistical Manual (DSM-V) Proposed Substance Use Disorder Criteria

1. Failure to fulfill major roles at work, school, home
 2. Recurrent use in hazardous situations (e.g., driving)
 3. Craving/compulsion to use
 4. Continued use despite social or interpersonal problems
 5. Tolerance – needing more to feel effect
 6. Withdrawal symptoms
 7. Unintended use – longer periods or quantity
 8. Unsuccessful efforts to cut down or control use
 9. Great deal of time spent to obtain, use and recover from use
 10. Giving up social, work or recreational activities
 11. Continued use despite physical or psychological problems caused or exacerbated by use
-
- Determinants of no (0-1), mild (2-3), moderate (4-5) or severe (6-11) substance use disorder based on the number of criteria



Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition)

- **Addiction is a complex but treatable disease that affects brain function and behavior.** Drugs of abuse alter the brain's structure and function, resulting in changes that persist long after drug use has ceased. This may explain why drug abusers are at risk for relapse even after long periods of abstinence and despite the potentially devastating consequences.
- **No single treatment is appropriate for everyone.** Treatment varies depending on the type of drug and the characteristics of the patients. Matching treatment settings, interventions, and services to an individual's particular problems and needs is critical to his or her ultimate success in returning to productive functioning in the family, workplace, and society.
- **Treatment needs to be readily available.** Because drug-addicted individuals may be uncertain about entering treatment, taking advantage of available services the moment people are ready for treatment is critical. Potential patients can be lost if treatment is not immediately available or readily accessible. As with other chronic diseases, the earlier treatment is offered in the disease process, the greater the likelihood of positive outcomes.
- **Effective treatment attends to multiple needs of the individual, not just his or her drug abuse.** To be effective, treatment must address the individual's drug abuse and any associated medical, psychological, social, vocational, and legal problems. It is also important that treatment be appropriate to the individual's age, gender, ethnicity, and culture.
- **Remaining in treatment for an adequate period of time is critical.** The appropriate duration for an individual depends on the type and degree of the patient's problems and needs. Research indicates that most addicted individuals need at least 3 months in treatment to significantly reduce or stop their drug use and that the best outcomes occur with longer durations of treatment. Recovery from drug addiction is a long-term process and frequently requires multiple episodes of treatment. As with other chronic illnesses, relapses to drug abuse can occur and should signal a need for treatment to be reinstated or adjusted. Because individuals often leave treatment prematurely, programs should include strategies to engage and keep patients in treatment.

Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition)

- **Behavioral therapies—including individual, family, or group counseling—are the most commonly used forms of drug abuse treatment.** Behavioral therapies vary in their focus and may involve addressing a patient's motivation to change, providing incentives for abstinence, building skills to resist drug use, replacing drug-using activities with constructive and rewarding activities, improving problem-solving skills, and facilitating better interpersonal relationships. Also, participation in group therapy and other peer support programs during and following treatment can help maintain abstinence.
- **Medications are an important element of treatment for many patients, especially when combined with counseling and other behavioral therapies.** For example, methadone, buprenorphine, and naltrexone (including a new long-acting formulation) are effective in helping individuals addicted to heroin or other opioids stabilize their lives and reduce their illicit drug use. Acamprosate, disulfiram, and naltrexone are medications approved for treating alcohol dependence. For persons addicted to nicotine, a nicotine replacement product (available as patches, gum, lozenges, or nasal spray) or an oral medication (such as bupropion or varenicline) can be an effective component of treatment when part of a comprehensive behavioral treatment program.
- **An individual's treatment and services plan must be assessed continually and modified as necessary to ensure that it meets his or her changing needs.** A patient may require varying combinations of services and treatment components during the course of treatment and recovery. In addition to counseling or psychotherapy, a patient may require medication, medical services, family therapy, parenting instruction, vocational rehabilitation, and/or social and legal services. For many patients, a continuing care approach provides the best results, with the treatment intensity varying according to a person's changing needs.
- **Many drug-addicted individuals also have other mental disorders.** Because drug abuse and addiction—both of which are mental disorders—often co-occur with other mental illnesses, patients presenting with one condition should be assessed for the other(s). And when these problems co-occur, treatment should address both (or all), including the use of medications as appropriate.

Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition)

- **Medically assisted detoxification is only the first stage of addiction treatment and by itself does little to change long-term drug abuse.** Although medically assisted detoxification can safely manage the acute physical symptoms of withdrawal and can, for some, pave the way for effective long-term addiction treatment, detoxification alone is rarely sufficient to help addicted individuals achieve long-term abstinence. Thus, patients should be encouraged to continue drug treatment following detoxification. Motivational enhancement and incentive strategies, begun at initial patient intake, can improve treatment engagement.
- **Treatment does not need to be voluntary to be effective.** Sanctions or enticements from family, employment settings, and/or the criminal justice system can significantly increase treatment entry, retention rates, and the ultimate success of drug treatment interventions.
- **Drug use during treatment must be monitored continuously, as lapses during treatment do occur.** Knowing their drug use is being monitored can be a powerful incentive for patients and can help them withstand urges to use drugs. Monitoring also provides an early indication of a return to drug use, signaling a possible need to adjust an individual's treatment plan to better meet his or her needs.
- **Treatment programs should test patients for the presence of HIV/AIDS, hepatitis B and C, tuberculosis, and other infectious diseases as well as provide targeted risk-reduction counseling, linking patients to treatment if necessary.** Typically, drug abuse treatment addresses some of the drug-related behaviors that put people at risk of infectious diseases. Targeted counseling focused on reducing infectious disease risk can help patients further reduce or avoid substance-related and other high-risk behaviors. Counseling can also help those who are already infected to manage their illness. Moreover, engaging in substance abuse treatment can facilitate adherence to other medical treatments. Substance abuse treatment facilities should provide onsite, rapid HIV testing rather than referrals to offsite testing—research shows that doing so increases the likelihood that patients will be tested and receive their test results. Treatment providers should also inform patients that highly active antiretroviral therapy (HAART) has proven effective in combating HIV, including among drug-abusing populations, and help link them to HIV treatment if they test positive.



- Diagrams of brain slides are from www.nida.nih.gov
- *Alkermes* accessed June 17, 2013
<http://www.vivitrol.com/opioidrecovery/howvivitrolworks>

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