Medications used in Substance Related Treatment and Recovery

Carl M. Dawson, M.S., MAC, LPC

Independent Practice

-

National Judicial College (NJC)

Reno, Nevada

National Drug Court Institute Faculty (NDCI)

Alexandria, Virginia

-

Missouri State University (MSU)

Departments of Psychology-Counseling, Leadership and Special Education

Springfield, Missouri

OVERVIEW

After attending this session, the participant will be able to:

- **DISCUSS THE THREE (3) OBJECTIVES OF MEDICATION MANAGEMENT;**

- **DESCRIBE THE THERAPUEUTIC TRIAD;**

- **DESCRIBE HOW THE FOLLOWING MEDICATIONS AFFECT TREATMENT:**

1. **ANTI-DEPRESSANTS; ANTI-ALCOHOL; ANTI-COCAINE; ANTI-METHAMPHETAMINE AND ANTI-HEROIN MEDICATIONS.**

2. **IDENTIFY THE BASIC PHYSIOLOGY OF OPIOID ADDICITION.**

3. **DESCRIBE HOW ANTI-OPIOID MEDICATIONS ASSIST IN OPIOID ADDICTION RECOVERY.**

THE FREQUENTLY ASKED QUESTION

“ISN’T MEDICATION MANAGEMENT JUST SWITCHING ONE DRUG FOR ANOTHER?”

THE THREE (3) MAIN OBJECTIVES OF MEDICATION MANAGEMENT

- **FIRST (1ST) OBJECTIVE: STOP THE ILLICIT DRUG USE!**
- **SECOND (2ND) OBJECTIVE: TO ABSTAIN FROM THE USE OF ALL MOOD ALTERING SUBSTANCES INCLUDING ALCOHOL.**
- **THIRD (3RD) OBJECTIVE: TO ELIMINATE THE OBSTACLES THAT LEAD TO RELAPSE.**

THE THERAPEUTIC TRIAD

MEDICTION-COUNSELING-EXERCISE THE “THERAPEUTIC TRIAD”

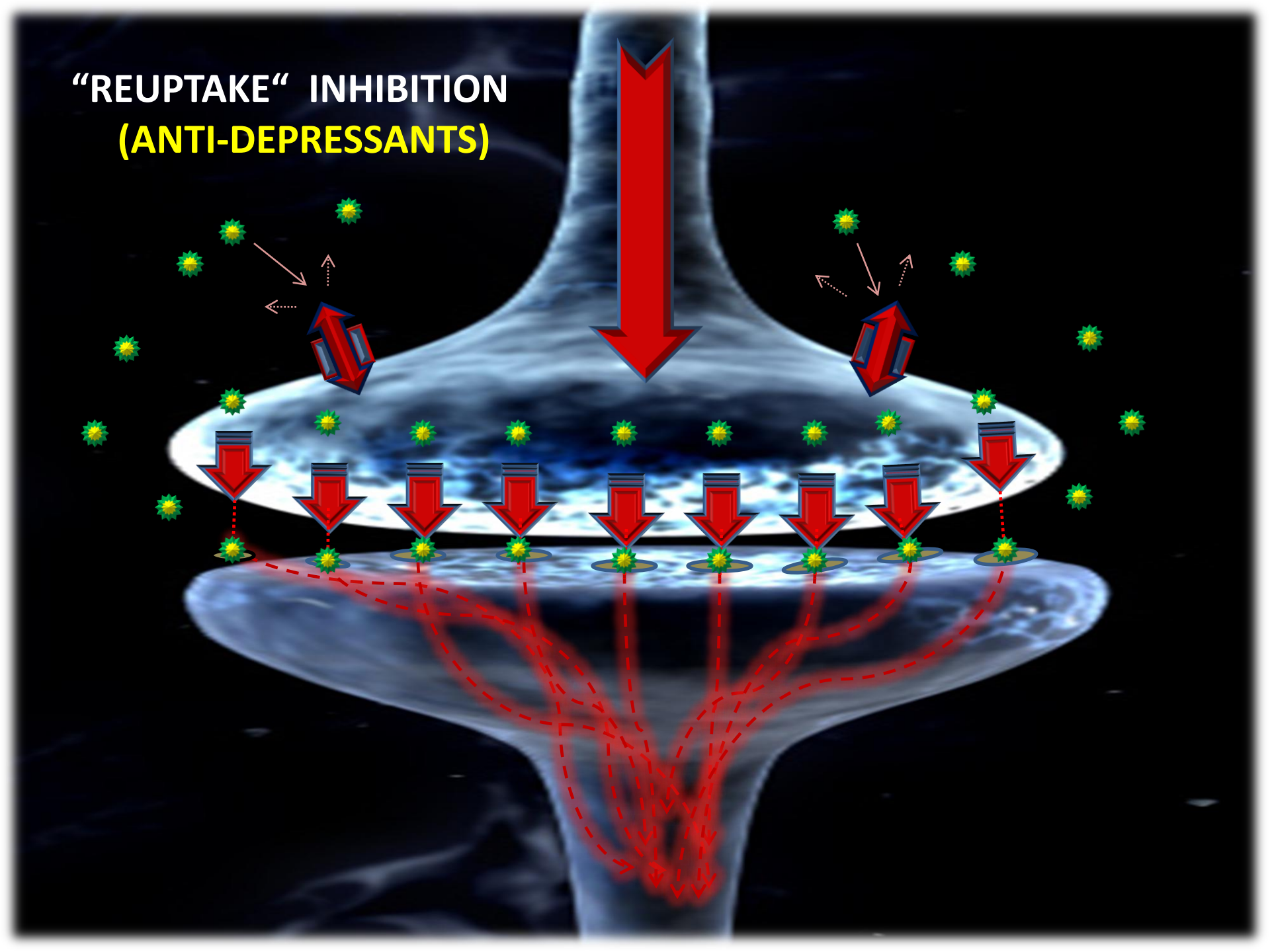
ANTI-DEPESSANT MEDICATIONS USE IN SUBSTANCE USE DISORDERS

- **“DESIGNER“ ANTI-DEPRESSANT MEDICATIONS:**
  THESE MEDICATIONS ARE SPECIFICALLY DESIGNED TO EFFECT EITHER SERIOTONIN (5ht) OR NOREPINEPHRINE (NE) AND TO A LESSER EXTENT DOPAMINE (DA) NEUROTRANSMITTERS.

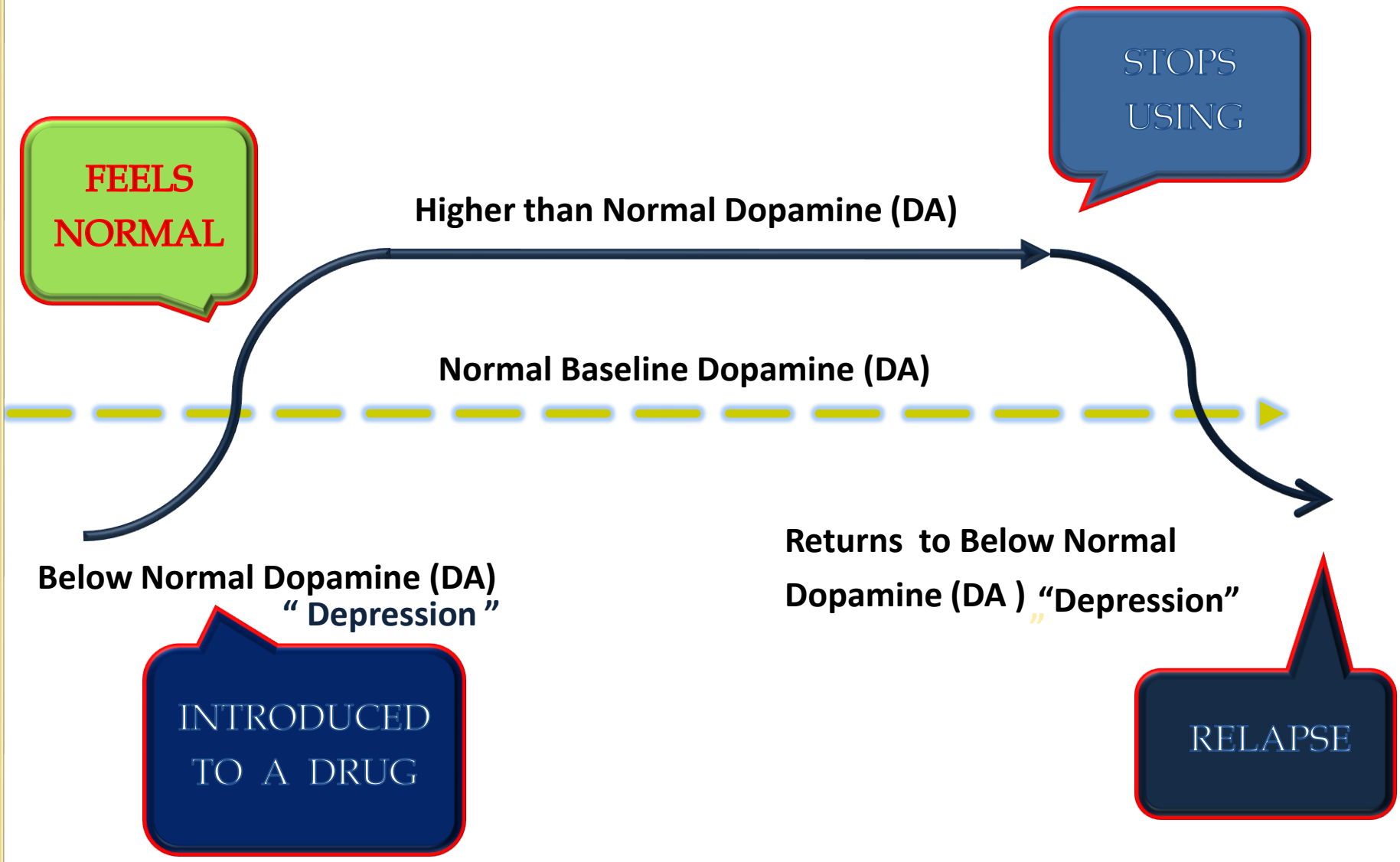
  THESE MEDICATIONS INCLUDE :

  1. **PROZAC (5ht)**
  2. **LEXAPRO (5ht)**
  3. **CELEXA (5ht)**
  4. **ZOLOFT (5ht)**
  5. **CYMBALTA (5ht & NE)**
  6. **WELLBUTRIN (NE & DA)**

- **THESE MEDICATIONS ARE EFFECTIVE FOR THE TREATMENT OF “REACTIVE“ AND “CLINICAL“ DEPRESSION.**


“REUPTAKE“ INHIBITION
(ANTI-DEPRESSANTS)

PSYCHIATRIC - “ALCOHOL“ MOOD DISORDERS



ANTI-ALCOHOL
MEDICATIONS

POINT OF REFERENCE . . .

- **THE BODY DOES NOT HAVE SPECIFIC RECEPTORS FOR ALCOHOL, THEREFORE, ALCOHOL MUST MASQUERADE ITSELF AS EITHER A PAIN KILLER (Opioid-Codeine) OR AS AN ANTI-ANXIETY AGENT (GABA - Xanax) IN ORDER TO GAIN ADMISSION INTO THE BODY.**

- **THAT IS WHY SUBSTANCES THAT BLOCK THE UPTAKE OF OPIOID AND ANTI-ANXIETY DRUGS IN THE BODY ARE ALSO BEING USED FOR THE TREATMENT OF ALCOHOL ABUSE AND RELAPSE.**


ANTABUSE
500

THE NORMAL ALCOHOL BREAKDOWN SEQUENCE

ADH

ACETALALHIDE IS VERY TOXIC TO THE BODY

ALDH

ACETATE

CO_2

H_2O

THE ALCOHOL BREAKDOWN SEQUENCE WITH “ANTABUSE”

ADH

ACETALALHIDE
IS VERY TOXIC TO THE BODY AND WILL ACCUMULATE CAUSING SEVERE TOXIC REACTIONS .

ANTI-ALCOHOL MEDICATIONS

- **ANTABUSE (DISULFIRAM): IS A MEDICINE DESIGNED TO STOP THE NORMAL BREAK DOWN OF ALCOHOL IN THE BODY.**

- **IT IS DESPENSED AT 250mg AND 500mg DOSAGES.**

- **ANTABUSE: STOPS THE BREAKDOWN OF ALCOHOL AT THE ACETALDEHYDE STAGE FOR APPROXIMATELY THREE (3) to FOURTEEN (14) DAYS.**

ALCOHOL AND ANTABUSE SIGNS AND SYMTPOMS

THE FOLLOWING SYMPTOMS USUALLY OCCUR WITHIN FIVE (5) TO TEN (10) MINUTES OF COMBINING ALCOHOL WITH ANTABUSE :

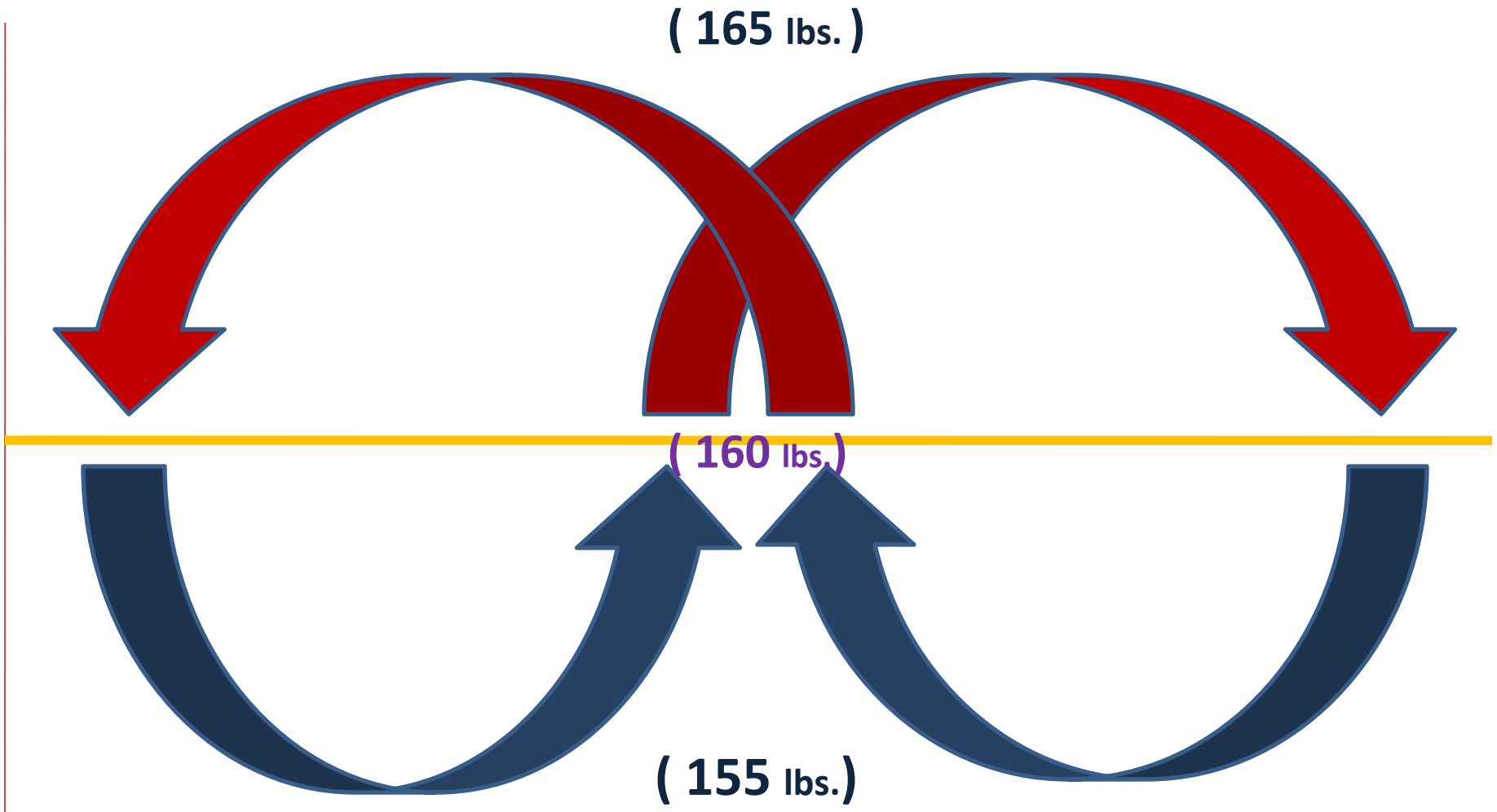
1. FLUSHING.
2. SWEATING.
3. THROBBING HEADACHE AND NECK PAIN .
4. PALPITATIONS (HEART) .
5. DYSPNEA (LABORED OR DIFFICULT BREATHING).
6. HYPERVENTILATION (INCREASED AND RAPID BREATHING).
7. TACHYCARDIA (FAST BEATING HEART).
8. HYPOTENSION (DECREASED BLOOD PRESSURE).
9. NAUSEA .
10. VOMITING .

ALCOHOL ANTI-CRAVING
MEDICATIONS

YOUR BRAIN IS CONSTANTLY ATTEMPTING TO "RIGHT" ITSELF.

HOMEOSTASIS: IS A TERM USED TO DESCRIBE THE BODY'S EFFORTS TO KEEP YOUR INTERNAL WORLD BALANCED!

“HOMEOSTASIS“ KEEPING EVERYTHING BALANCED !!!



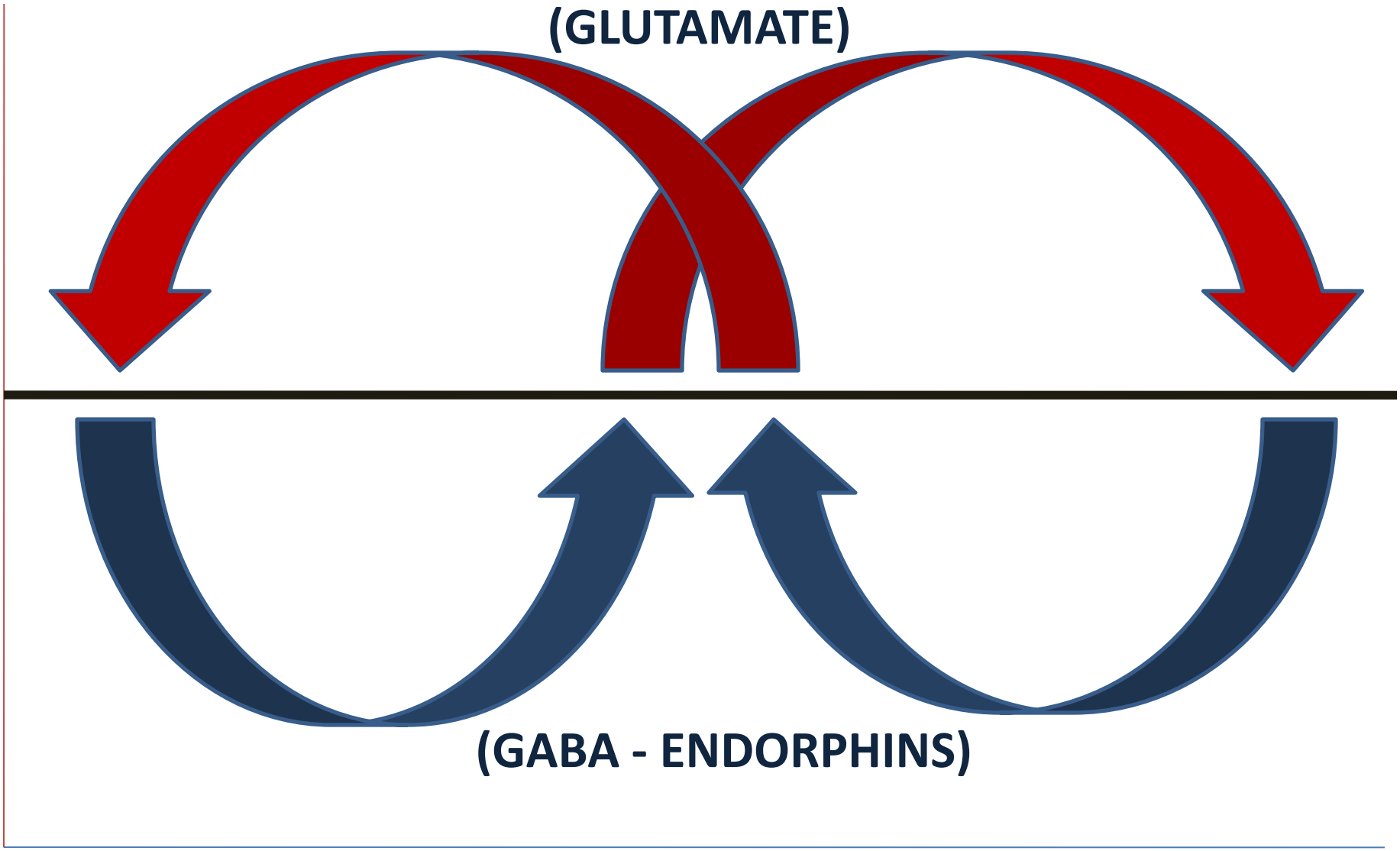
THE BIG THREE (3) NEUROTRANSMITTERS INVOLVED IN ANTI-CRAVING MEDICATIONS

Glutamate: Activates the "under-excited " brain, producing the symptoms of a "Hangover ".

GABA: Sedates the "over excited" brain, reduces anxiety, acts like Xanax or Alcohol on the brain .

Endorphins: "body produce morphine" Biological "Pain Killers" known as Opioids .

“HOMEOSTASIS“ KEEPING EVERYTHING BALANCED !



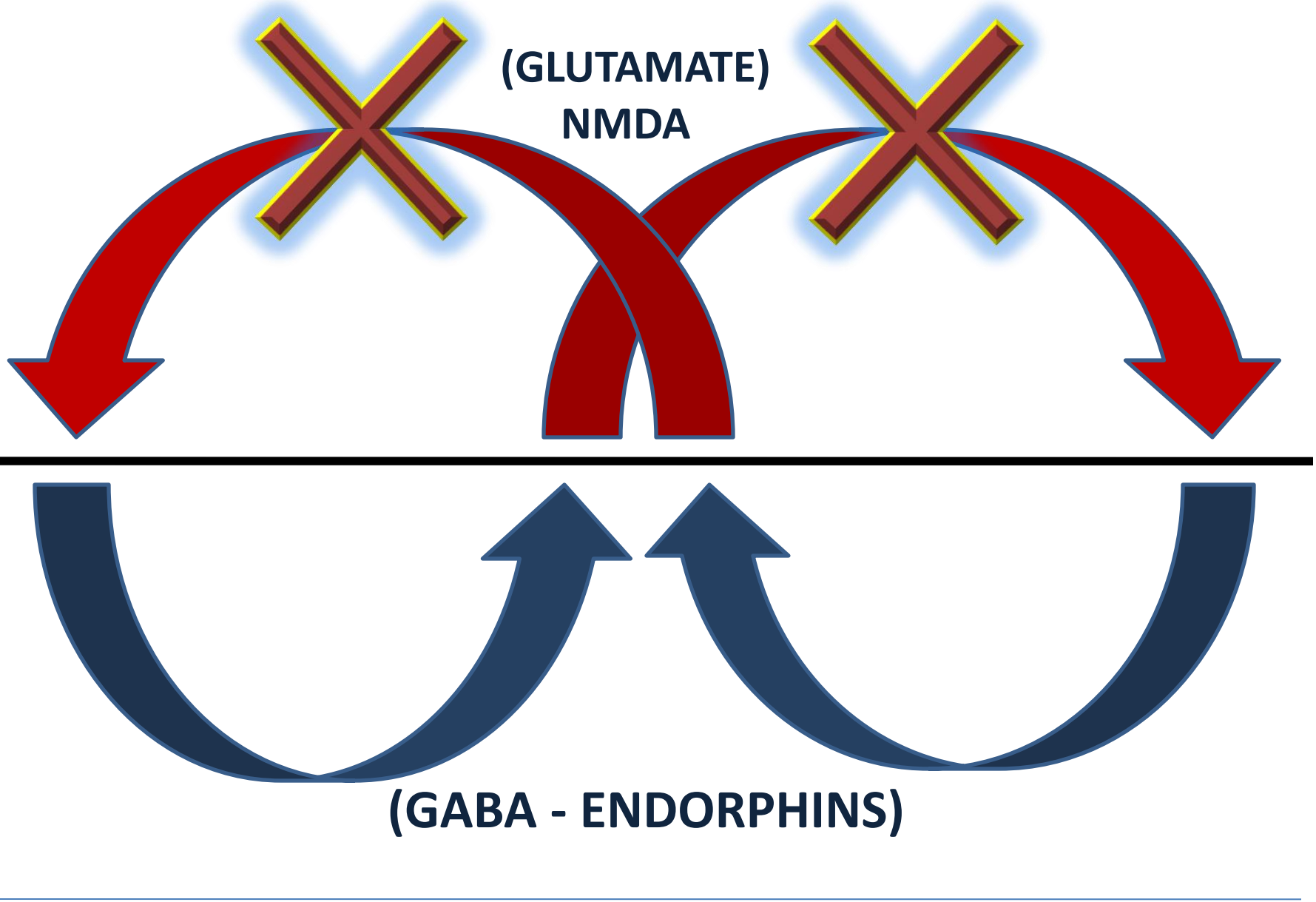

84 enterotabletter (42 x 2)
Var 06 95 59
Campral® 333 mg
acamprosat

- **ALCOHOL WITHDRAWAL SYNDROME: GLUTAMATE IS THOUGHT TO BE THE CAUSE OF THE UNPLEASANT (AGITATION) SYMPTOMS EXPERIENCED DURING ALCOHOL WITHDRAWAL.**

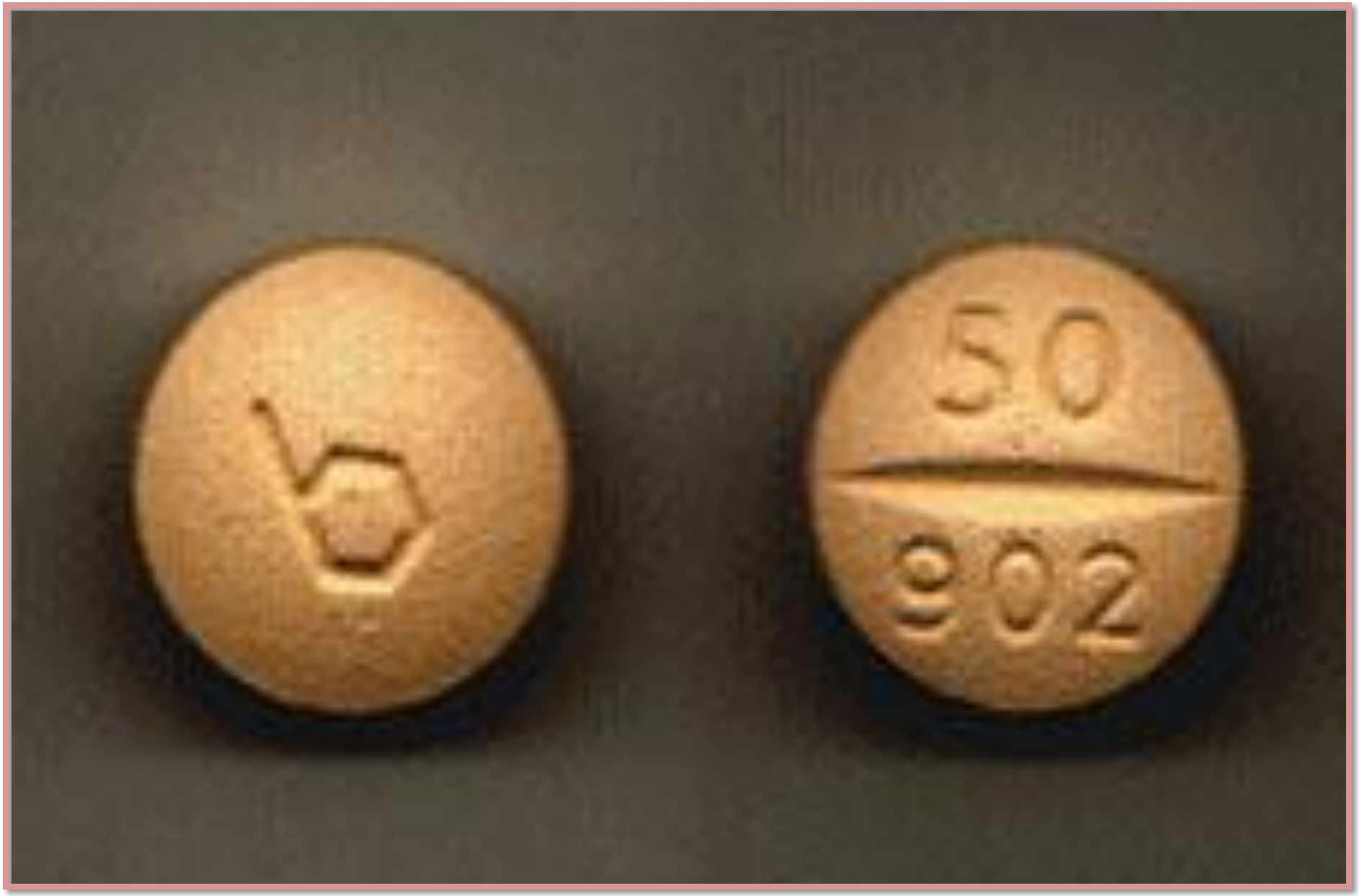
- **CAMPRAL (ACAMPROSATE): IS DESIGNED TO QUICKLY RESTORE THE GLUTAMATE SYSTEM AFTER DRINKING. THUS, REDUCING THE NEED TO CONTINUE DRINKING IN ORDER TO AVOID THE UNPLEASANT WITHDRAWAL SYMPTOMS.**

- **CAMPRAL WORKS BEST WITH THE "BINGE" DRINKER.**

“CAMPARAL” EFFECTS THE GLUTAMATE CYCLE



NALTREXONE (Vivitrol; Trexan; ReVia)



- **NALTREXONE (DON'T CONFUSE THIS WITH NALOXONE) IS A FULL OPIATE ANTAGONISTS (BLOCKER).**

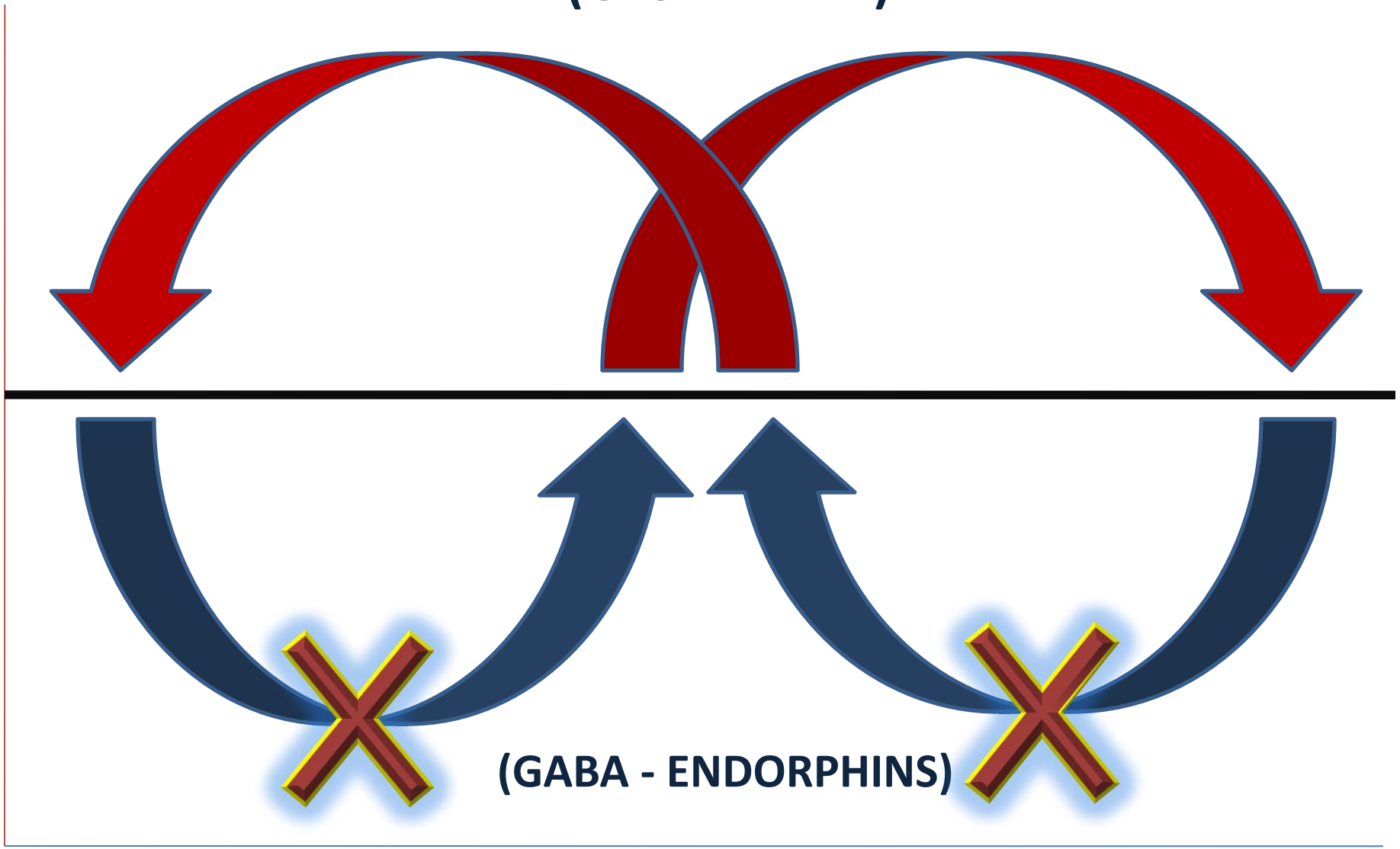
- **NALTREXONE IS DESIGNED TO BLOCK THE RAPID RELEASE OF ENDORPHINS THAT SOME INDIVIDUALS REPORT EXPERIENCING WHEN CONSUMING ALCOHOL.**

- **NALTREXONE IS APPROVED AS A OPIOID BLOCKER WITH OPIOID DEPENDENCE TREATMENT .**

- **INJECTED NALTREXONE (VIVITROL "time released") IS DESIGNED TO BLOCK THE ENDORPHIN "RUSH" AND REDUCES THE DESIRED AFFECTS OF ALCOHOL FOR APPROXIMATELY (30) DAYS.**

- **NALTREXONE WORKS BEST WITH THE "CHRONIC" DRINKER.**

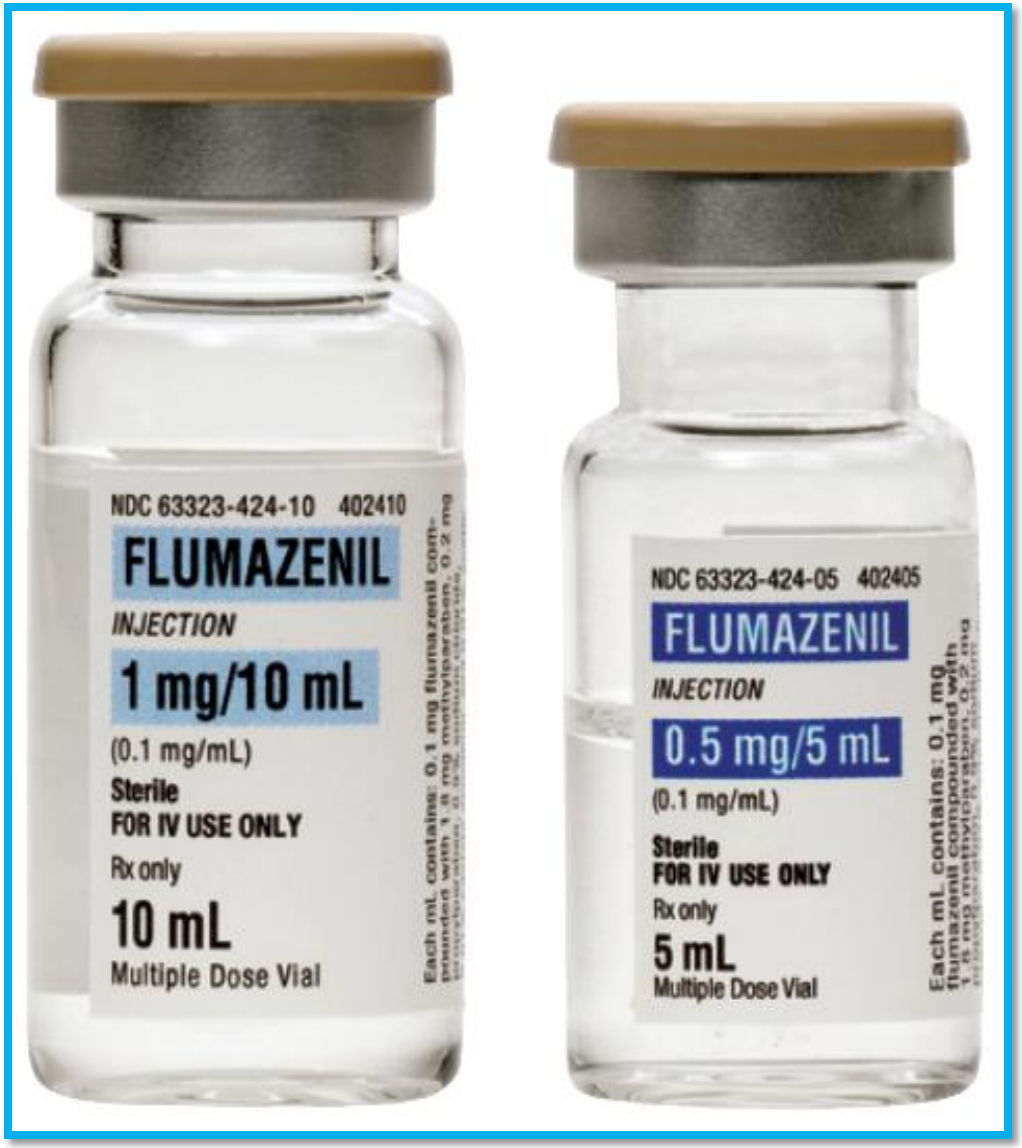
“NALTREXONE” EFFECTS THE ENDORPHIN RELEASING CYCLES



BENZODIAZEPINE ANTAGONIST
(FLUMAZENIL)

FLUMAZENIL

- FLUMAZENIL IS A GABA RECEPTOR ANTAGONIST.
- FLUMAZENIL WILL BLOCK THE UPTAKE OF BENZODIAZEPINES.
- FLUMAZENIL IS VERY EFFECTIVE WITH BENZODIAZEPINE OVERDOSE.



ANTI-COCAINE AND ANTI-COCAINE CRAVING

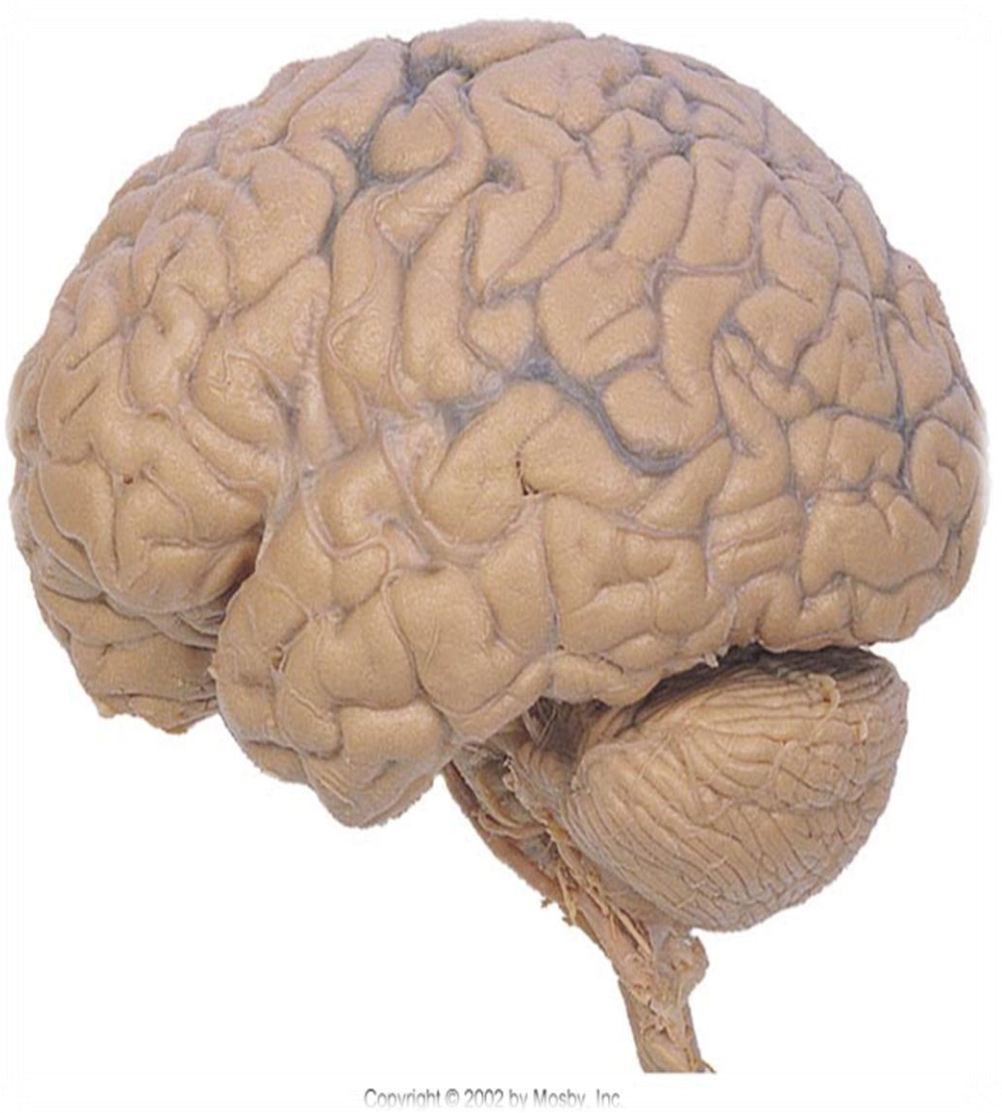
MEDICATIONS

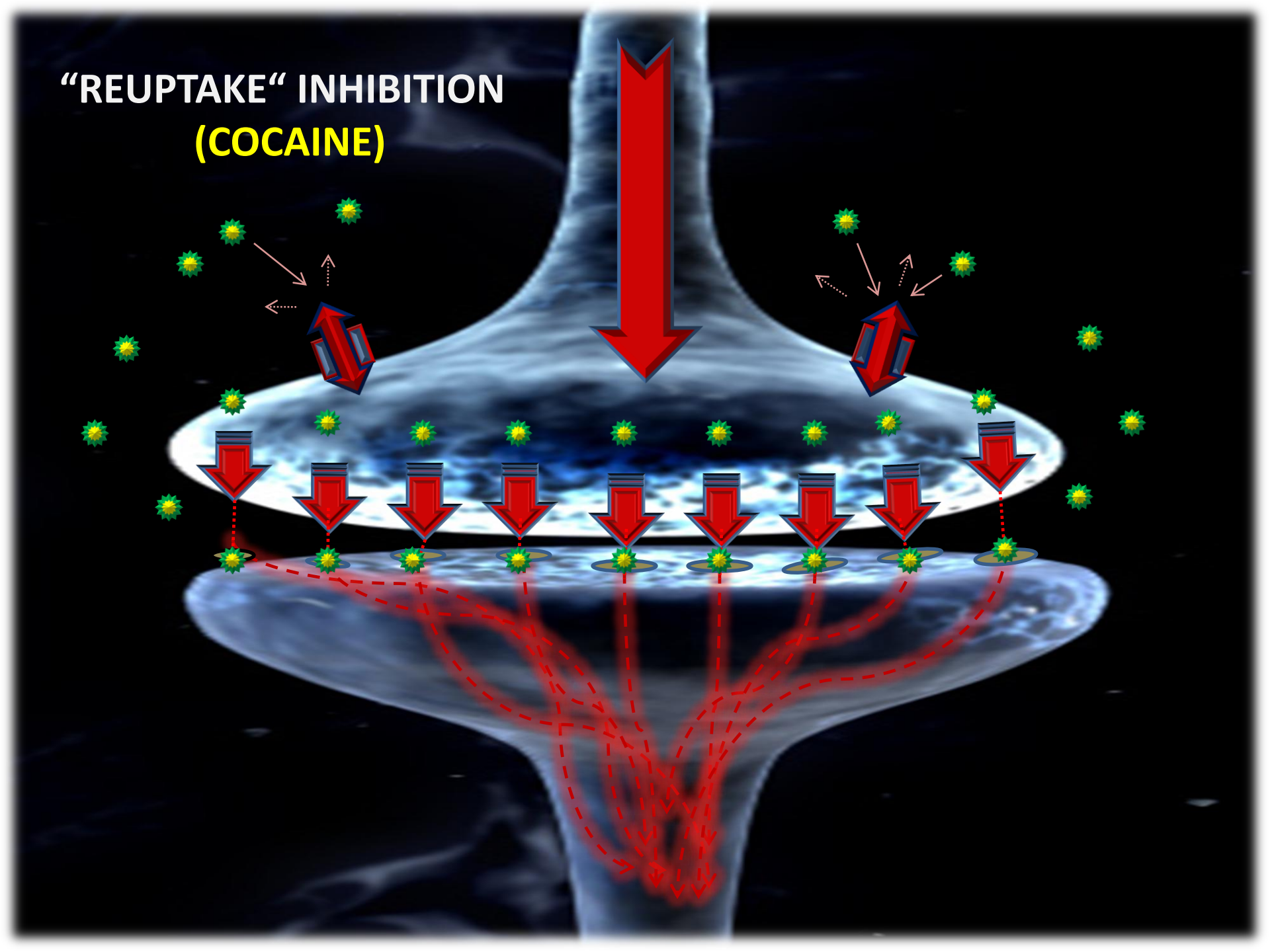
BLOOD BRAIN BARRIER (BBB)

A REGION OF THE BRAIN THAT RESTRICTS ELEMENTS OF THE BLOOD AND CEREBROSPINAL FLUID FROM ENTERING INTO THE BRAIN.

THE BBB PROVIDES THE BRAIN PHYSICAL AND CHEMICAL PROTECTION FROM PHYSICAL INJURY AND HARMFUL SUBSTANCES .

MENINGEAL LAYERS MAKE UP THE BBB




“REUPTAKE“ INHIBITION
(COCAINE)

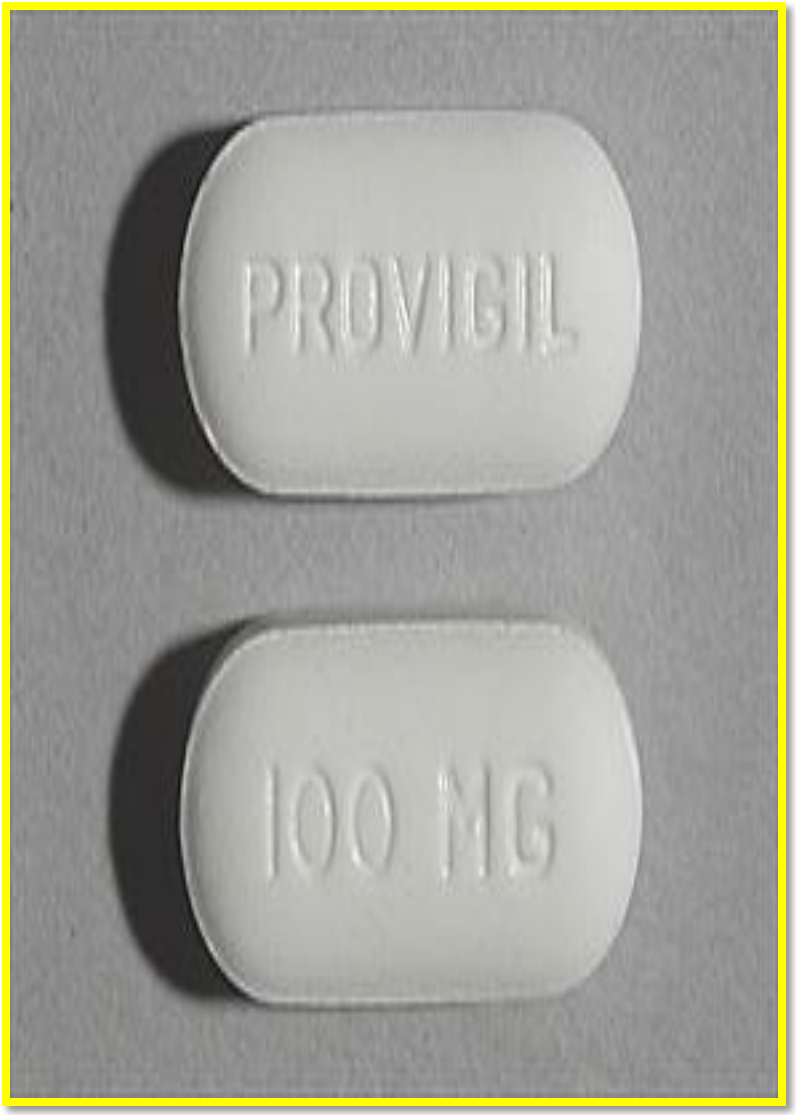
Cocaine "Anti-craving" Medications

- **GABAPENTIN (Neurontin): An anti-epileptic medication.**
- **VIGABATRIN (Sabril): An anti-epileptic medication.**
- **BACLOFEN (Gablofen, Lioresal): A muscle relaxant medication.**
- **N-ACETYLCYSTEINE (NAC): An amino acid that curbs cocaine cravings and helps repair the damage caused by cocaine in animals.**
- **NOCAINE: A weaker version of cocaine that blocks the stimulant effects of cocaine.**
- **DISULFIRAM (Antabuse): makes alcohol-cocaine use unpleasant.**

(www. Nim.nih.gov/medlineplus/druginfo/druginfo/meds/a602016.html)

PROVIGIL (MODAFINIL) AND NUVIGIL (ARMODAFINIL)

- ARE SCHEDULED IV DRUGS .
- ACTS ON THE NE AND DA SYSTEMS.
- EFFECTIVE IN ESTABLISHING A STEADY SLEEP PATTERN IN COCAINE AND METH DEPENDENT INDIVIDUALS .
- REDUCES THE INDIVIDUALS DRUG CRAVINGS.
- DOES NOT ACTIVATE THE VTA CENTERS OF THE BRAIN.
- INCREASES HISTAMINE RELEASE.

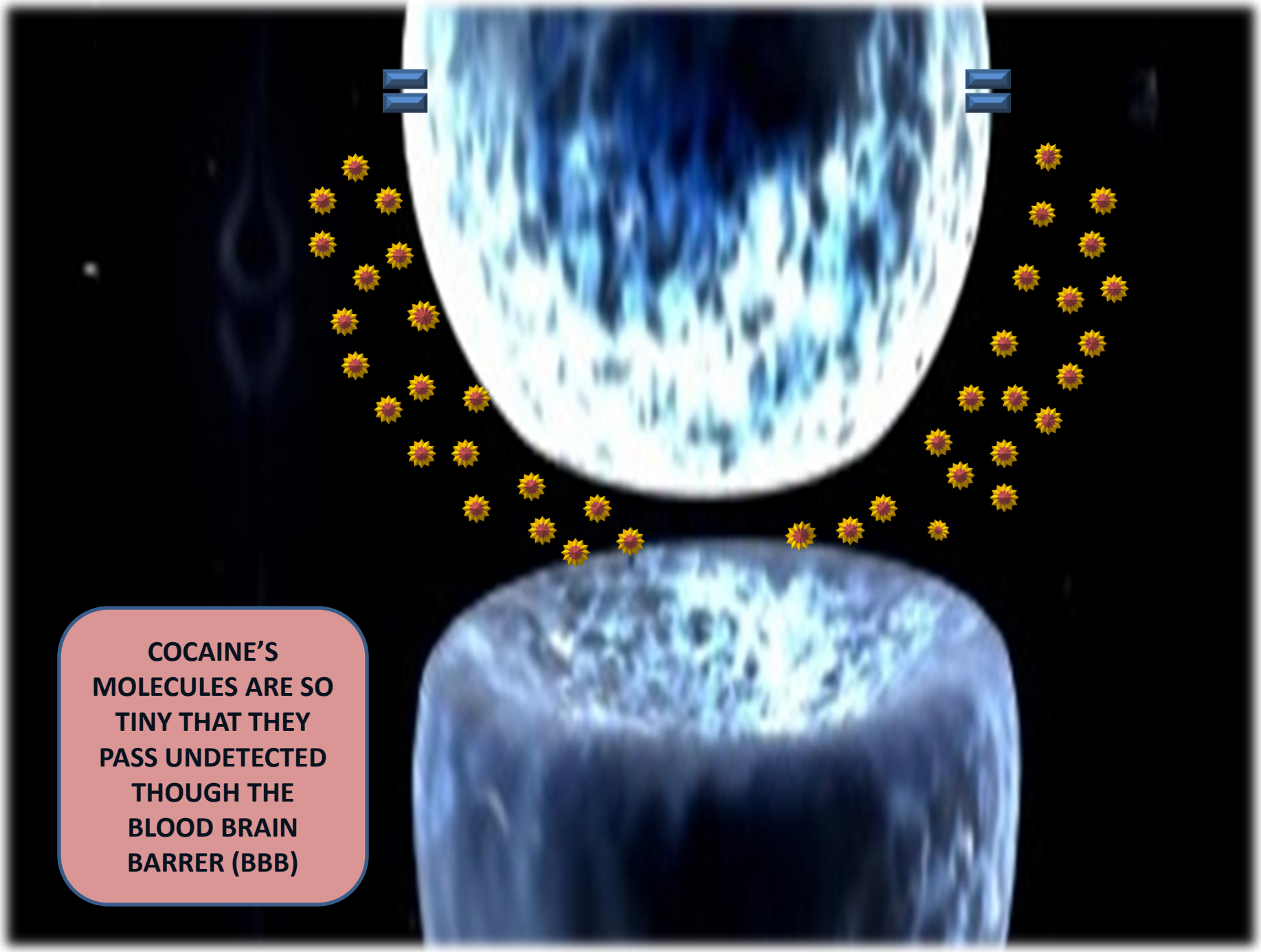


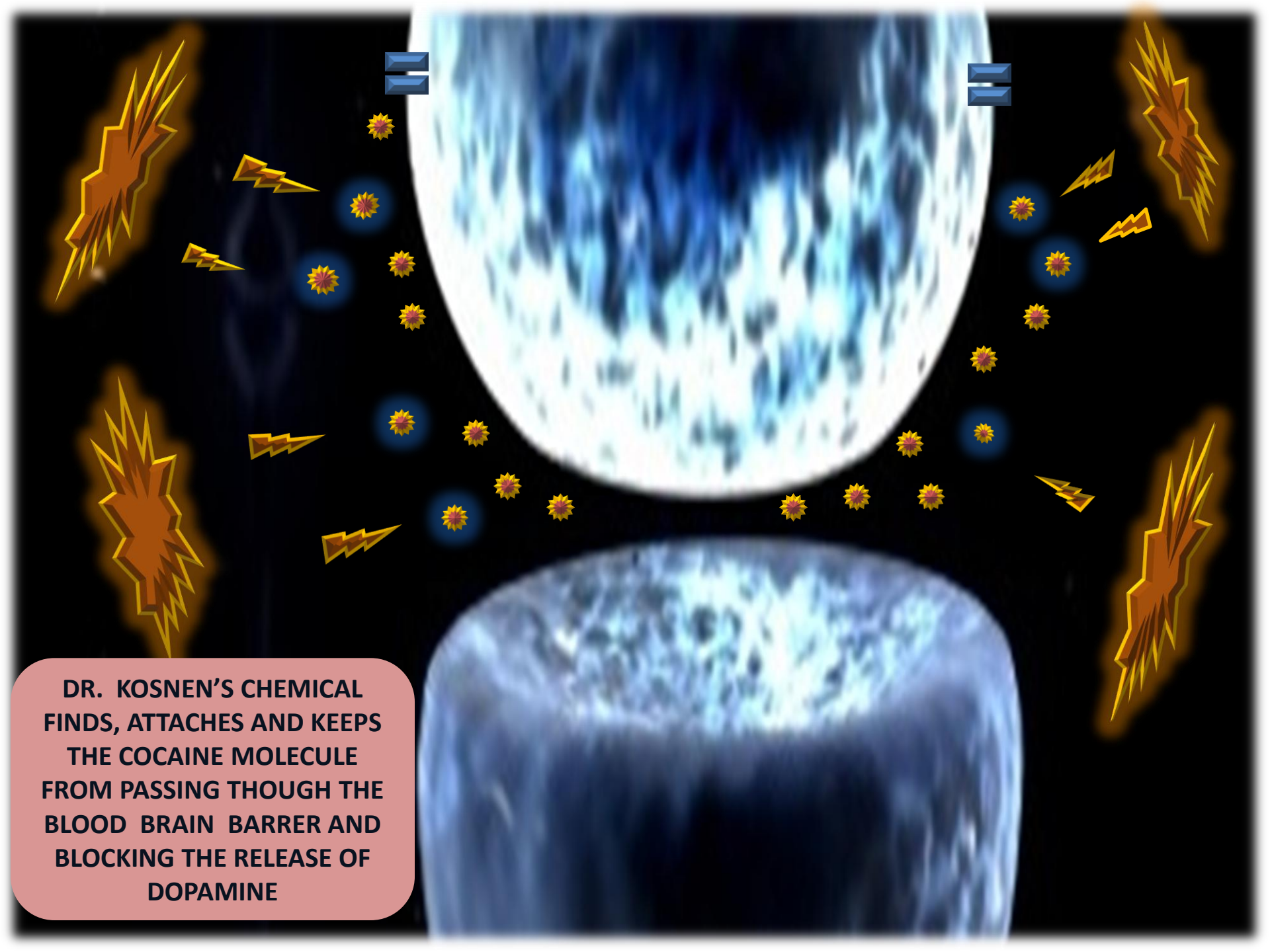
ANTI-COCAINE VACCINE (TA-CD)

- **TA-CD is an anti-body based medication that identifies the cocaine molecule and degrades it's effects before it can enter the brains blood barrier and hyper-stimulating the dopamine centers of the brain.**

- **Developed by Dr. Thomas Kosten, Baylor School of Medicine, Houston, Texas.**

- **His research has had mixed results indicating that the medication works as designed, but individuals can override the inoculation effect by taking greater doses of cocaine.** **(Kosten et al, 2014 Drug and Alcohol Dependence 140,42-417)**


COCAINE'S MOLECULES ARE SO TINY THAT THEY PASS UNDETECTED THOUGH THE BLOOD BRAIN BARRER (BBB)


DR. KOSNEN'S CHEMICAL FINDS, ATTACHES AND KEEPS THE COCAINE MOLECULE FROM PASSING THOUGH THE BLOOD BRAIN BARRER AND BLOCKING THE RELEASE OF DOPAMINE

Anti-methamphetamine Vaccine (MH6)

- **Researchers at the Univ. of Arkansas developed a non-addicting, long-acting anti-methamphetamine antibody-gene-based medication that is designed to block methamphetamine from accessing the dopamine releasing centers in the brain.**

(Bio. Psychiatry, 2013 Apr 15; 73(8):721-8.doi:1016/j.biopsych.2012.09.010)

AN INTRODUCTION TO OPIOID SUBSTANCES

- **Let's Review "Agonistic" and "Antagonistic" substances.**

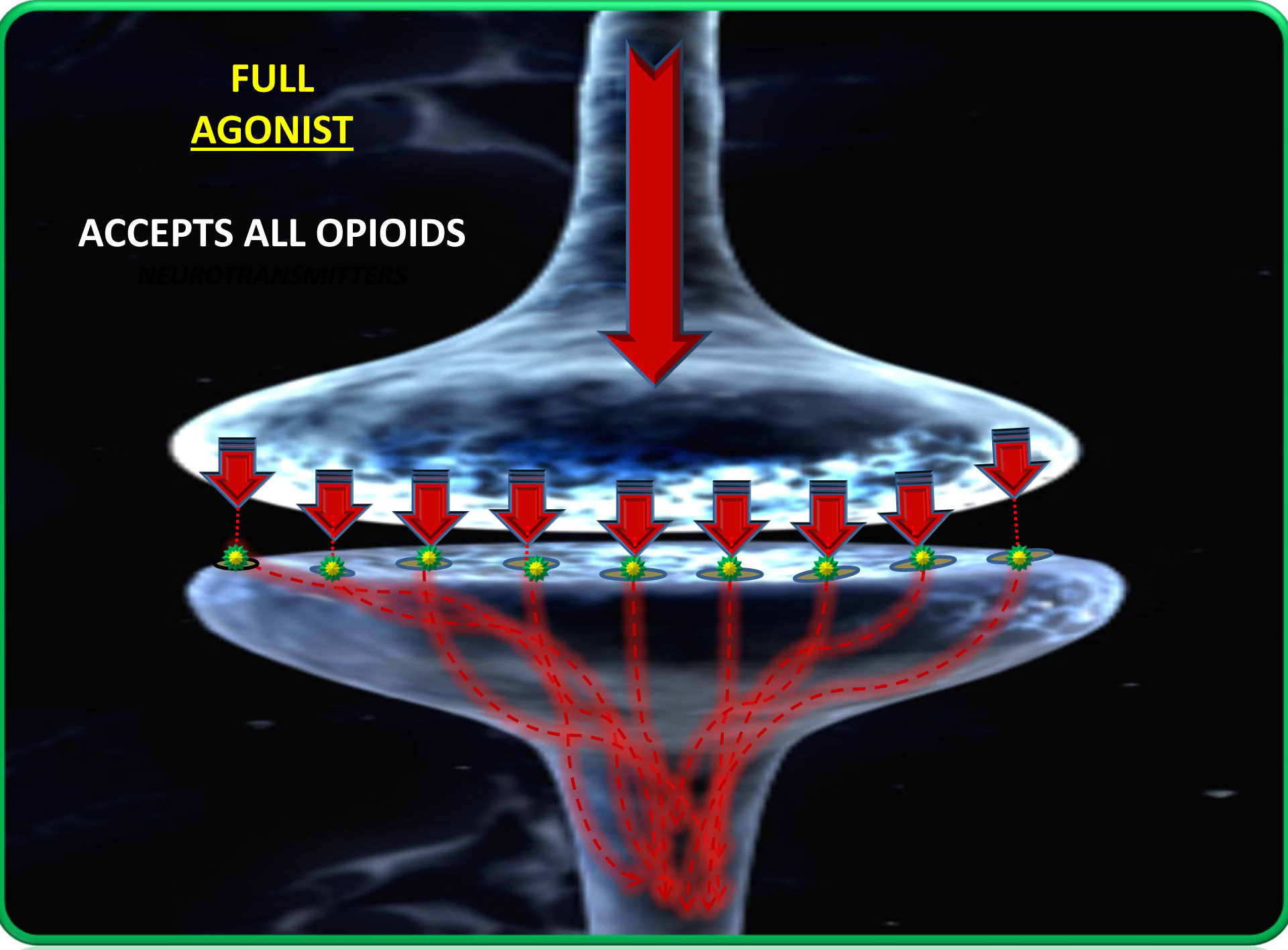
- **An introduction to opioid substances and how they impact the nervous system.**

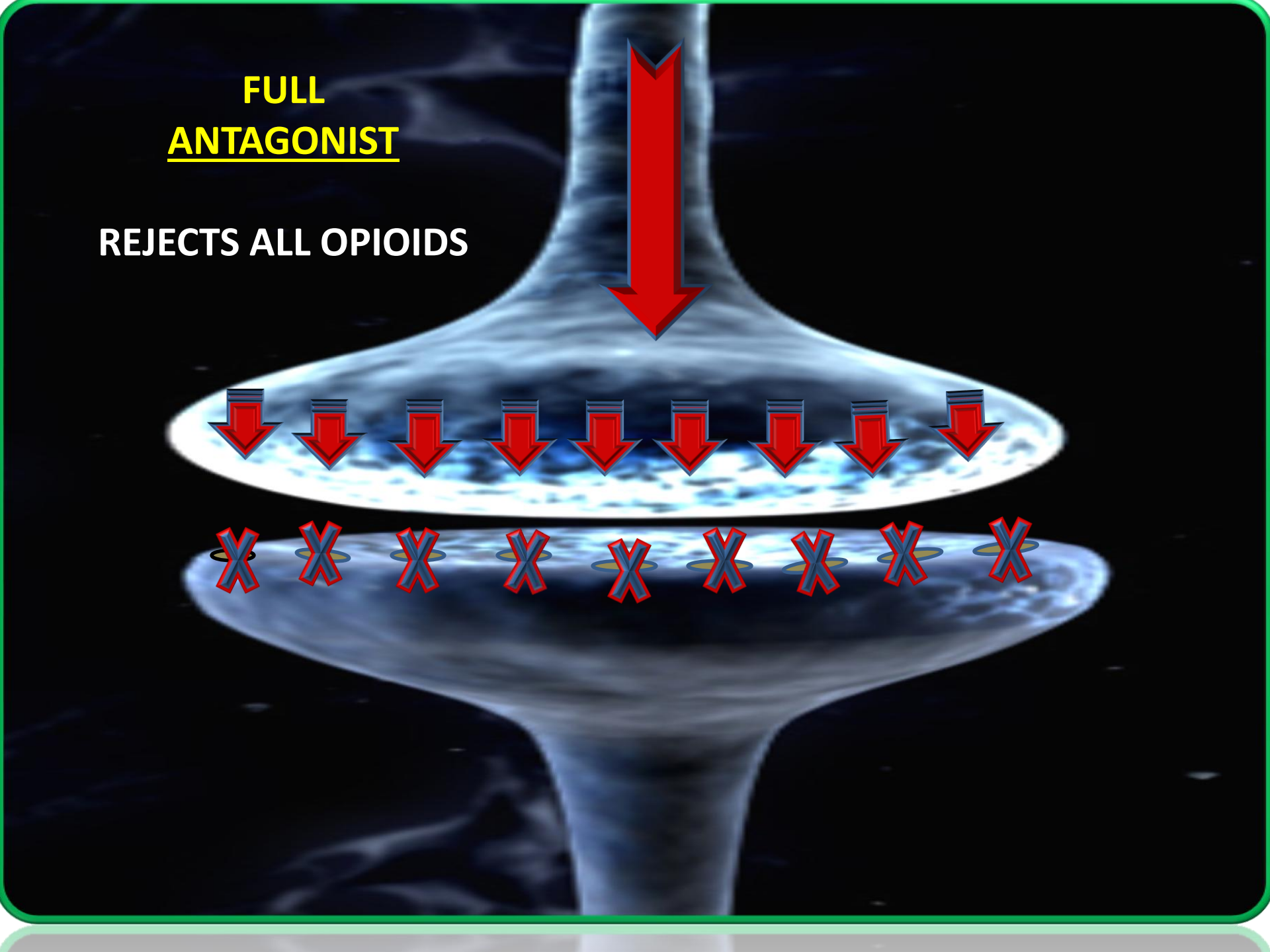
- **Three (3) Therapeutic Objectives when treating opioid abuse and dependence.**

- **The Therapeutic Dilemma when treating opioid abuse and dependence.**

- **The use of medications in the treatment of opioid abuse, dependency and recovery. Methadone, Subutex, Suboxone.**

“AGONIST“
“ANTAGONIST“
PARTIAL “AGONIST“/“ANTAGONIST“
RECEPTORS


FULL
AGONIST
ACCEPTS ALL OPIOIDS
NEUROTRANSMITTERS


FULL
ANTAGONIST
REJECTS ALL OPIOIDS

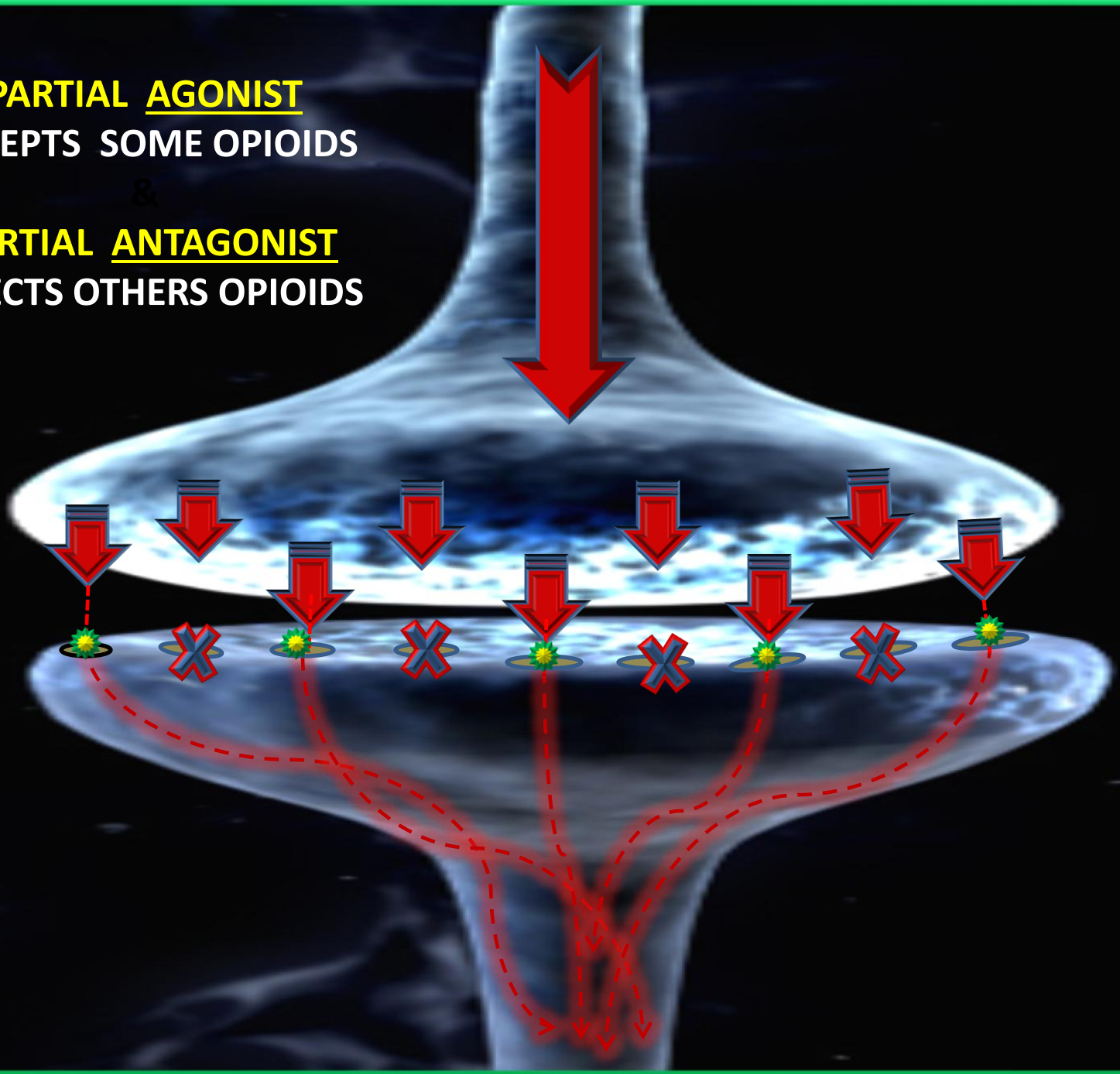
PARTIAL AGONIST

ACCEPTS SOME OPIOIDS

&

PARTIAL ANTAGONIST

REJECTS OTHERS OPIOIDS



OPIATE DRUGS ARE "LOOK ALIKE" NEUROTRANSMITTERS

- THE HUMAN BODY PRODUCES IT'S OWN NATURAL PAIN FIGHTING SUBSTANCES CALLED ENDOGENOUS (MORPHINE CREATED BY THE BODY) OPIOIDS .

- "SYNTHETHIC" OPIATES ARE MANUFACTERED SUBSTANCES CREATED IN A LABORATORY AND TAILORED TO MIMIC THE BODY'S OWN ENDOGENOUS OPIOIDS.

THE THREE (3) PRIMARY OPIOID RECEPTORS

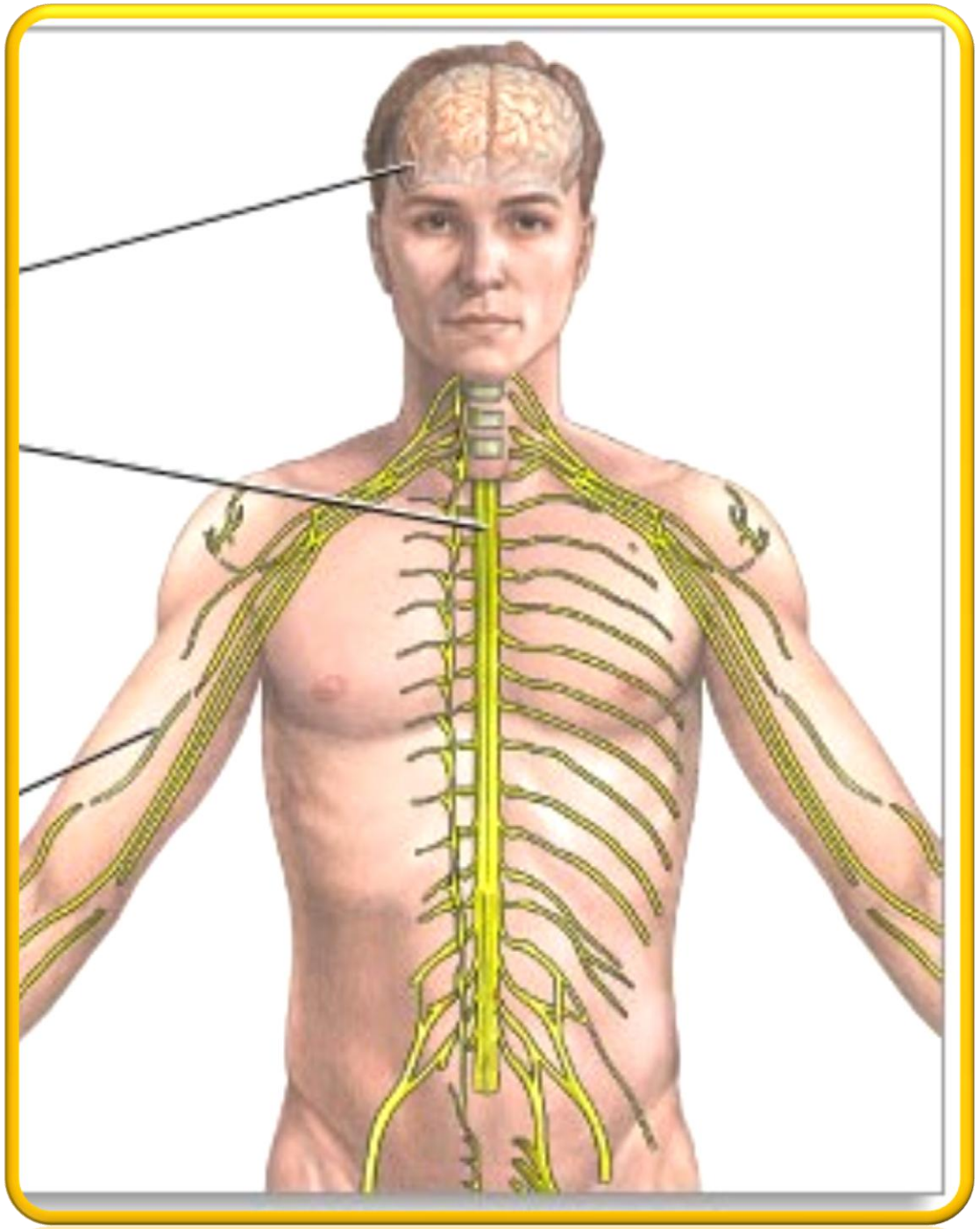
- **Mu RECEPTORS :**

  THE PRIMARY OPIOID RECEPTORS THAT HAVE THE STRONGEST ATTRACTION TO OPIATE SUBSTANCES . . . AND TRIGGER THE RELEASE OF PAIN AND PLEASURE PRODUCING CHEMICALS IN THE BRAIN.

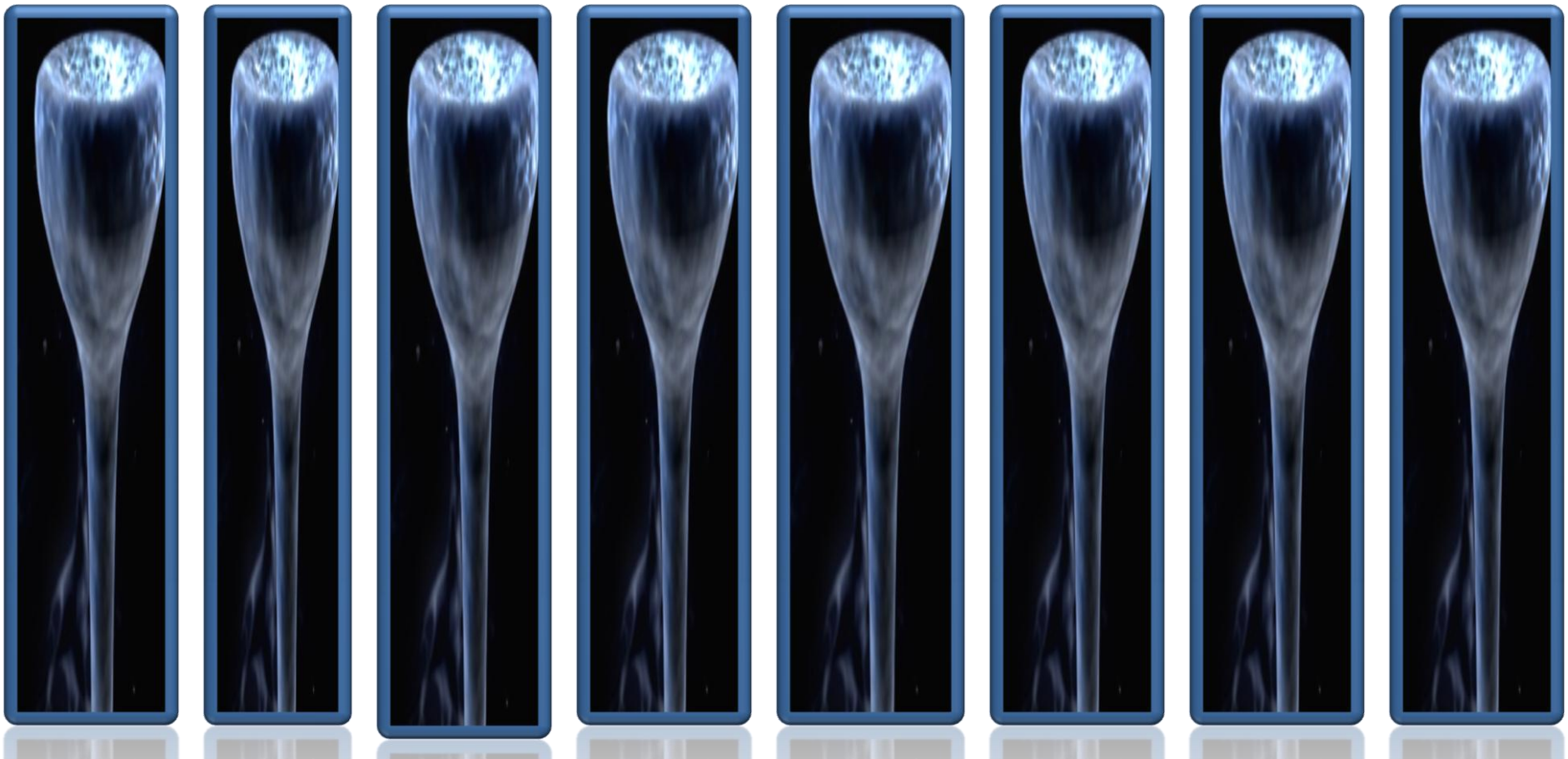
- **DELTA AND KAPPA OPIOID RECEPTORS ARE LESS ATTRACTIONED TO OPIATE SUBSTANCES IN THE BRAIN.**

THE CENTRAL NERVOUS SYSTEM (CNS) CONSISTS OF THE BRAIN AND THE SPINAL CORD.

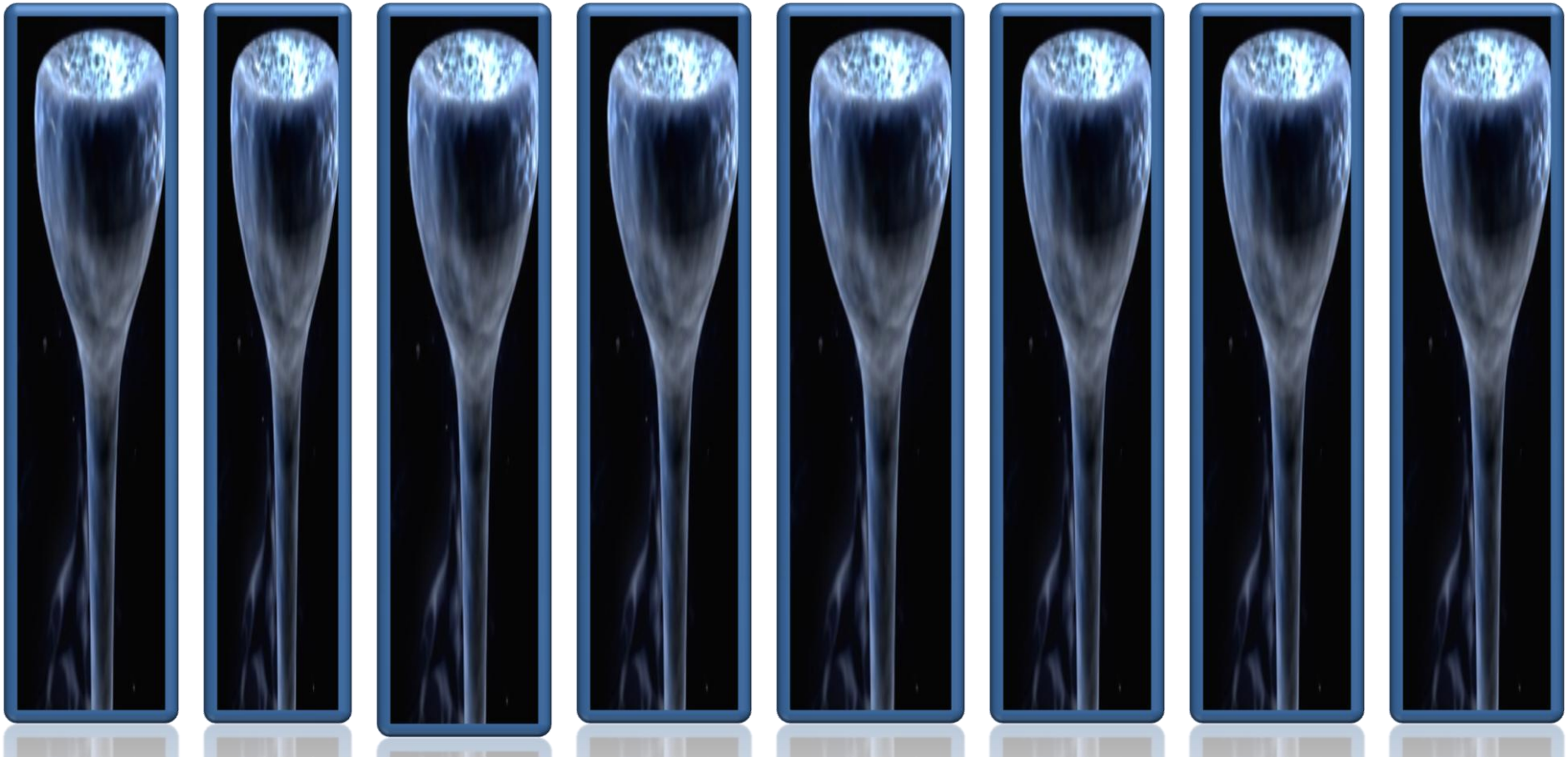
THE GREATEST AMOUNT OF THE BODY'S OPIATE (Mu) RECEPTORS ARE LOCATED THROUGHOUT THE BRAIN . . . LESS IN THE SPINAL CORD.



OUR NERVOUS SYSTEM (N.S.) HAS A DETERMINED NUMBER OF RECEPTORS DESIGNED TO REGISTER PAIN

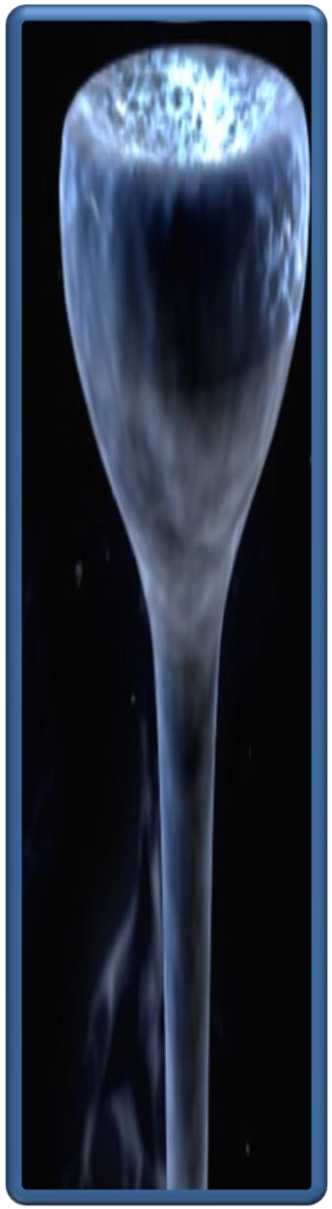
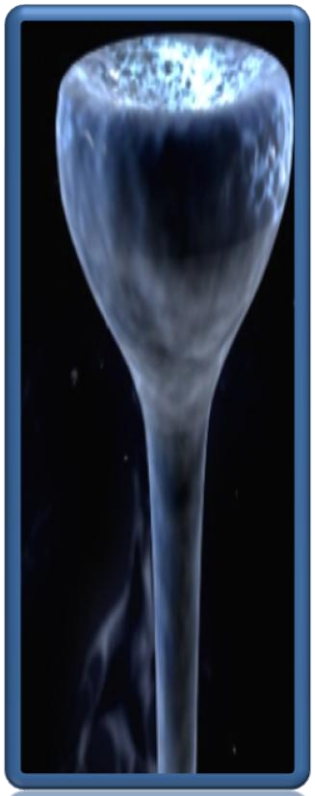
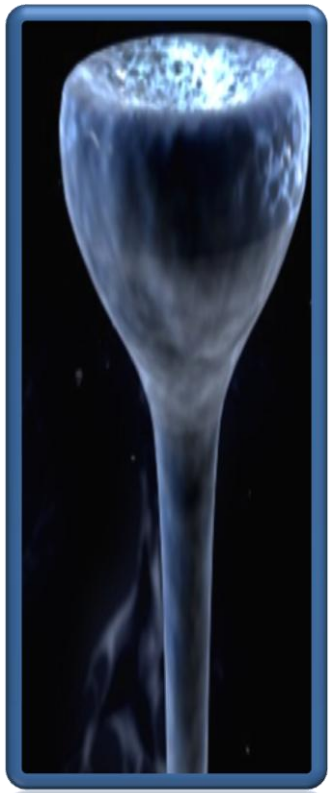
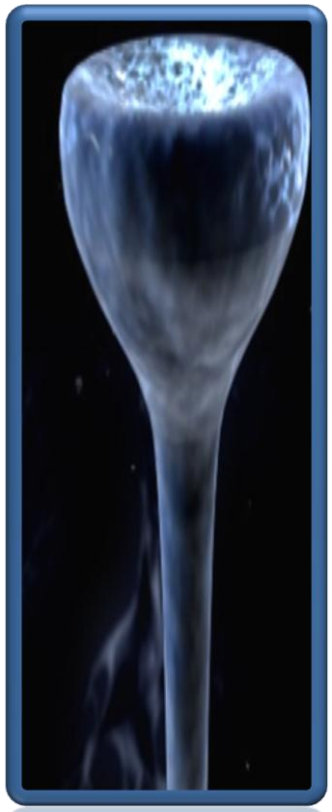
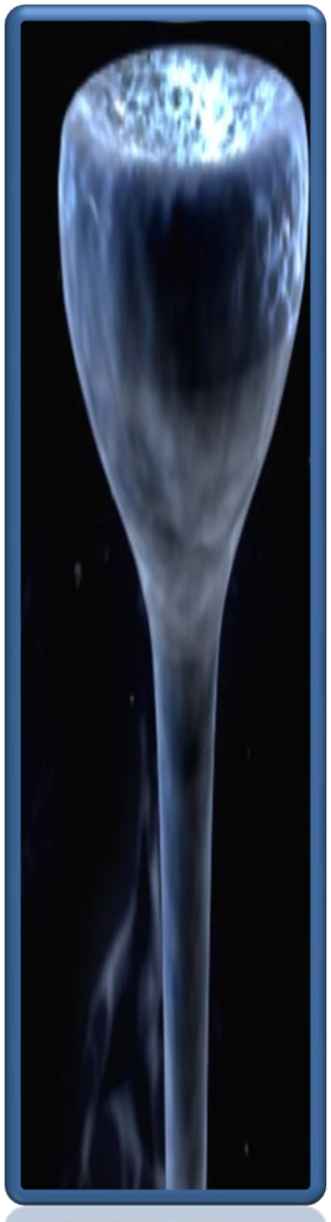


OUR NERVOUS SYSTEM (N.S.) ALSO HAS A DETERMINED NUMBER OF OPIOID RECEPTORS, DESIGNED TO PROTECT US FROM EXPERENCING PAIN



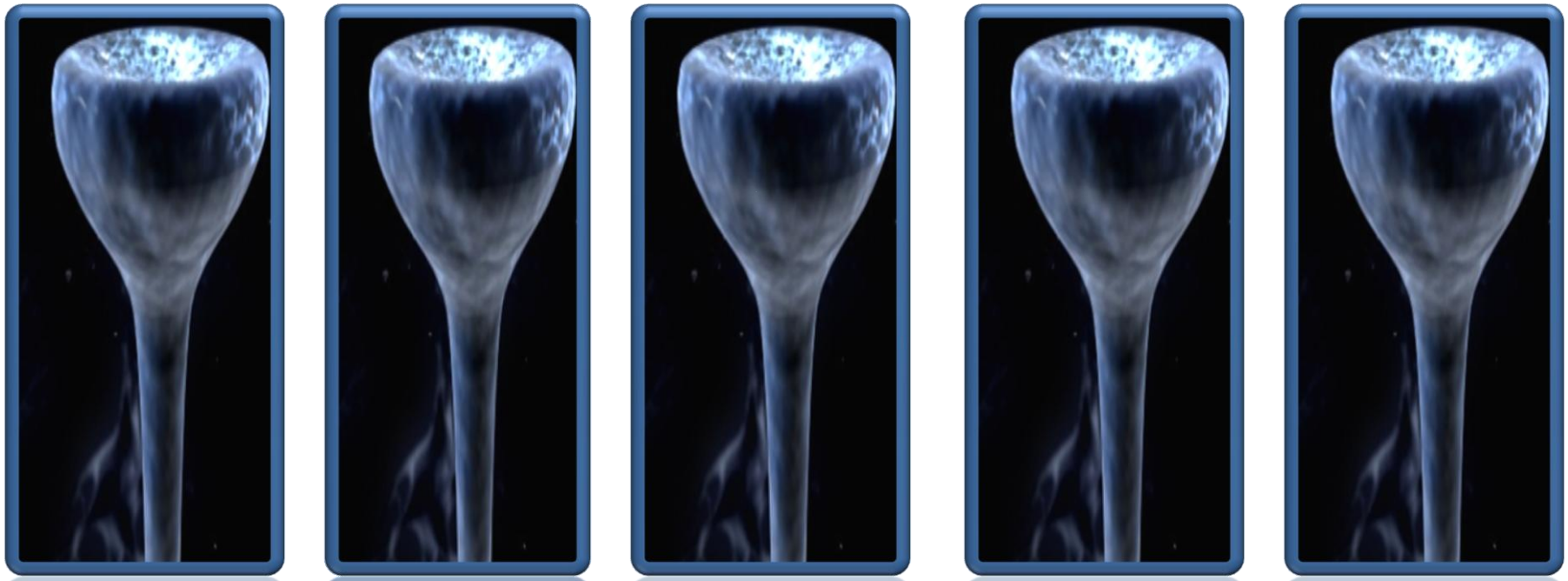
THIS IS REFERRED TO AS
PAIN RECEPTION
HYPER-STIMULATION
OR

“UP REGULATION“

THIS IS REFERRED TO AS
OPIOID RECEPTION

“DOWN REGULATION“



THE PROCESS OF THE BRAIN HYPER-STIMULATING THE PAIN RECEPTORS AND ALSO "DOWN REGULATING" THE OPIOID RECEPTORS CAN RESULT IN . . . LONG-TERM (CHRONIC) AND IRREVERSIBLE NEURONAL CHANGES

THREE (3) THERAPEUTIC OBJECTIVES TO REMEMBER WHEN TREATING THE OPIOID DEPENDENT INDIVIDUAL

THE THERAPEUTIC DILEMMA

SINCE OPIOID DEPENDENCE IS A MEDICAL / PHYSICAL DISORDER IMPACTING THE BRAIN . . .

YOUR THERAPEUTIC DILEMMA IS . .

. . . WILL THE INDIVIDUAL'S N.S. REBOUND ONCE THE OPIOID DRUGS ARE DISCONTINUED . . . OR HAS THE LONG-TERM USE OF OPIOID DRUGS CREATED A PERMINATE (CHRONIC) CHANGE IN THE BRAIN, REQUIRING THE USE OF OPIOID REPLACEMENT MEDICATIONS IN ORDER TO BE ABLE TO FUNCTION WITHOUT PAIN OR PHYSICAL CRAVINGS ?

YOU MUST CONSIDER THE FOLLOWING:

. . . ASSUMING THAT THE BODY WILL NATURALLY REBOUND AND RETURN TO NORMAL . . .

THE USE OF OPIOID REPLACEMENT MEDICATIONS MAY BE COMPLETELY UNNECESSARY . . .

HOWEVER, IN LIMITED CIRCUMSTANCES OPIOID REPLACEMENT MEDICATIONS MAYBE AN IMPORTANT SHORT-TERM THERAPERUTIC OPTION, IN CONJUNCTION WITH CONVENTIONAL TREATMENT.

IN THIS EVENT, OUR THERAPEUTIC MOTIVE WILL BE TO EVENTUALLY TAPER-DOWN AND DISCONTINUE THE USE OF OPIOID REPLACEMENT MEDICATIONS SAFELY OVER TIME.

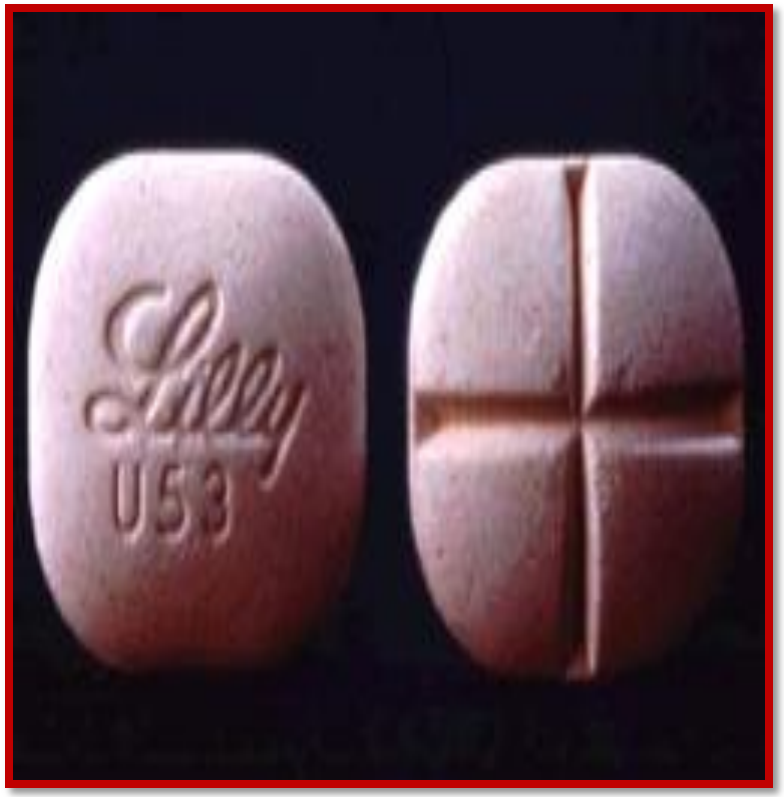
- **HOWEVER . . . IF AN INDIVIDUALS CHRONIC USE OF OPIOID SUBSTANCES HAS PRODUCED NEUROLOGICAL CHANGES THAT HAS RESULTED IN OPIOID RECEPTOR "DOWN REGULATION", THEN THE USE OF OPIOID REPLACEMENT "MAINTANENCE" MEDICATIONS MAY NEEDED IN ORDER TO AVOID RELAPSE AND THE EVENTUAL RETURN TO ILLICIT DRUG USING BEHAVIORS.**

- **THE FOLLOWING MEDICATIONS ARE CURRENTLY BEING USED IN LONG-TERM OPIOID DEPENDENCE TREATMENT:**

  1. **METHADONE (FULL OPIOID AGONIST).**
  2. **BUPRENORPHINE (PARTIAL OPIOID AGONIST).**
     - **a . SUBUTEX (STRAIGHT BUPRENORPHINE).**
     - **b . SUBOXONE (BUPRENORPHINE WITH NALOXONE).**

METHADONE MAINTENANCE (Harm Reduction Therapy)

Dispensed in 5mg, 20mg, 40mg dosages



- METHADONE TREATMENT IS FREQUENTLY REFERRED TO AS “MAINTENANCE“ OR “HARM REDUCTION“ THERAPY.

- METHADONE IS A LESS POWERFUL OPIOID THAN (MORPHINE OR HEROIN).

- METHADONE IS A ”LONG-ACTING“ OPIOID.

- METHADONE USE WILL TYPICALLY BLOCK OPIOID WITHDRAWAL SYMPTOMS FOR TWENTY FOUR (24) TO SEVENTY TWO (72) HOURS .

- ALTHOUGH LESS POWERFUL THAN MORPHINE . . . METHADONE DOES CREATE A PHYSICAL DEPENDENCY AND CAN BE ABUSED AND DIVERTED .

BUPRENOPHINE

ANTI-OPIOID,
ANTI-CRAVING MEDICATIONS

(SUBUTEX vs. SUBOXONE)

BUPRENOPHINE

- BUPRENOPHINE IS AN OPIOID AND WILL PRODUCE PHYSICAL DEPENDENCY AND EUPHORIA LIKE ALL OPIOID SUBSTANCES.

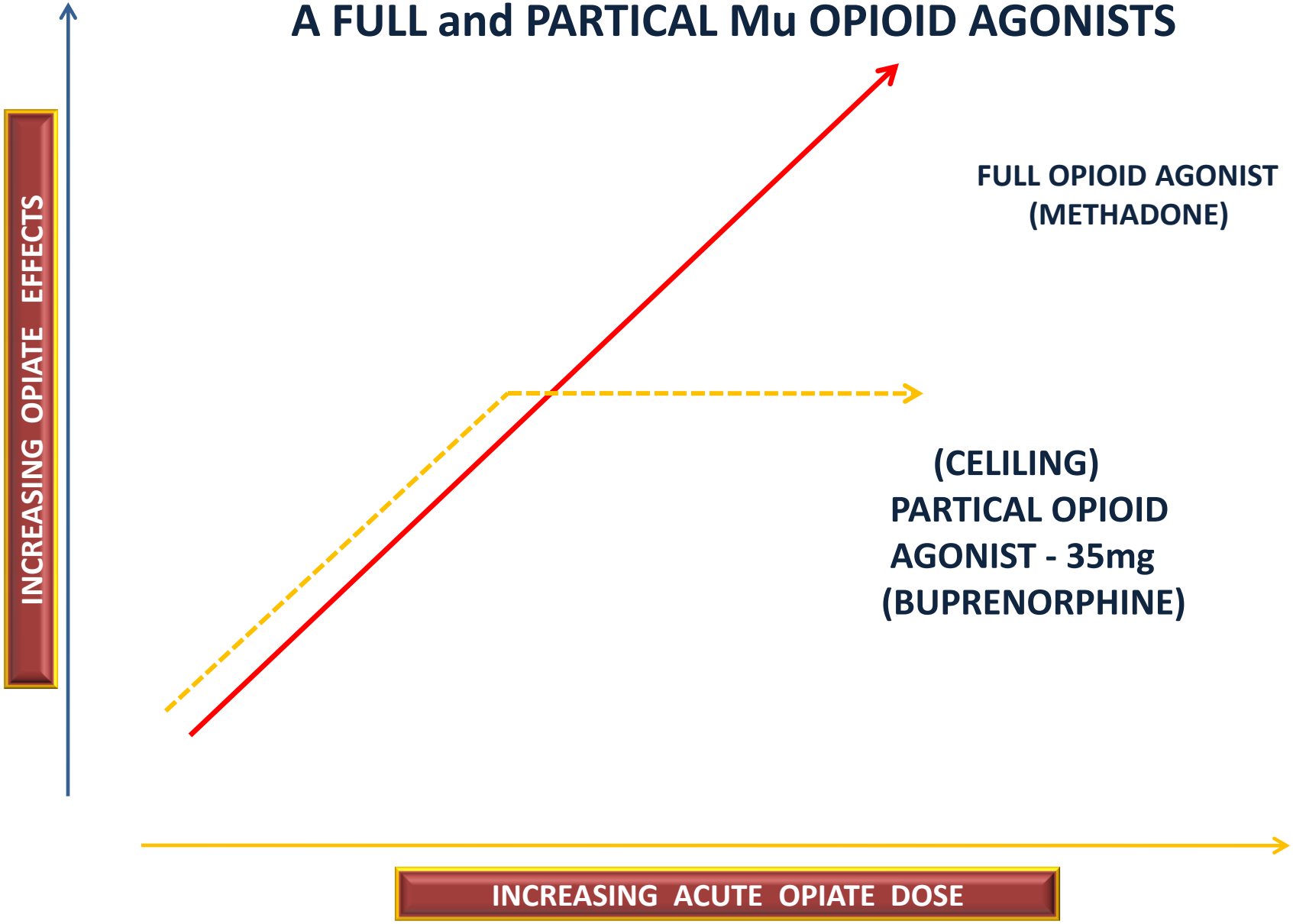
- BUPRENOPHINE IS LESS POWERFUL THAN METHADONE . . . BUT . . . MORE POSSESSIVE "STUBBORN" OF THE Mu RECEPTORS THAN OTHER OPIOID SUBSTANCES.

- BUPRENOPHINE CAN BE USED AS EITHER A "HARM REDUCTION" MAINTENANCE MEDICATION . . . OR . . . AS AN OPIOID WITHDRAWAL MEDICATION.

- BUPRENOPHINE WILL PRODUCE A "CELILING EFFECT ".

- 16mg OF BUPRENOPHINE IS EQUAL TO 60mg OF MEHTADONE.

HYPOTHETICAL DOSE RESPONSE CURVE FOR A FULL and PARTICAL Mu OPIOID AGONISTS



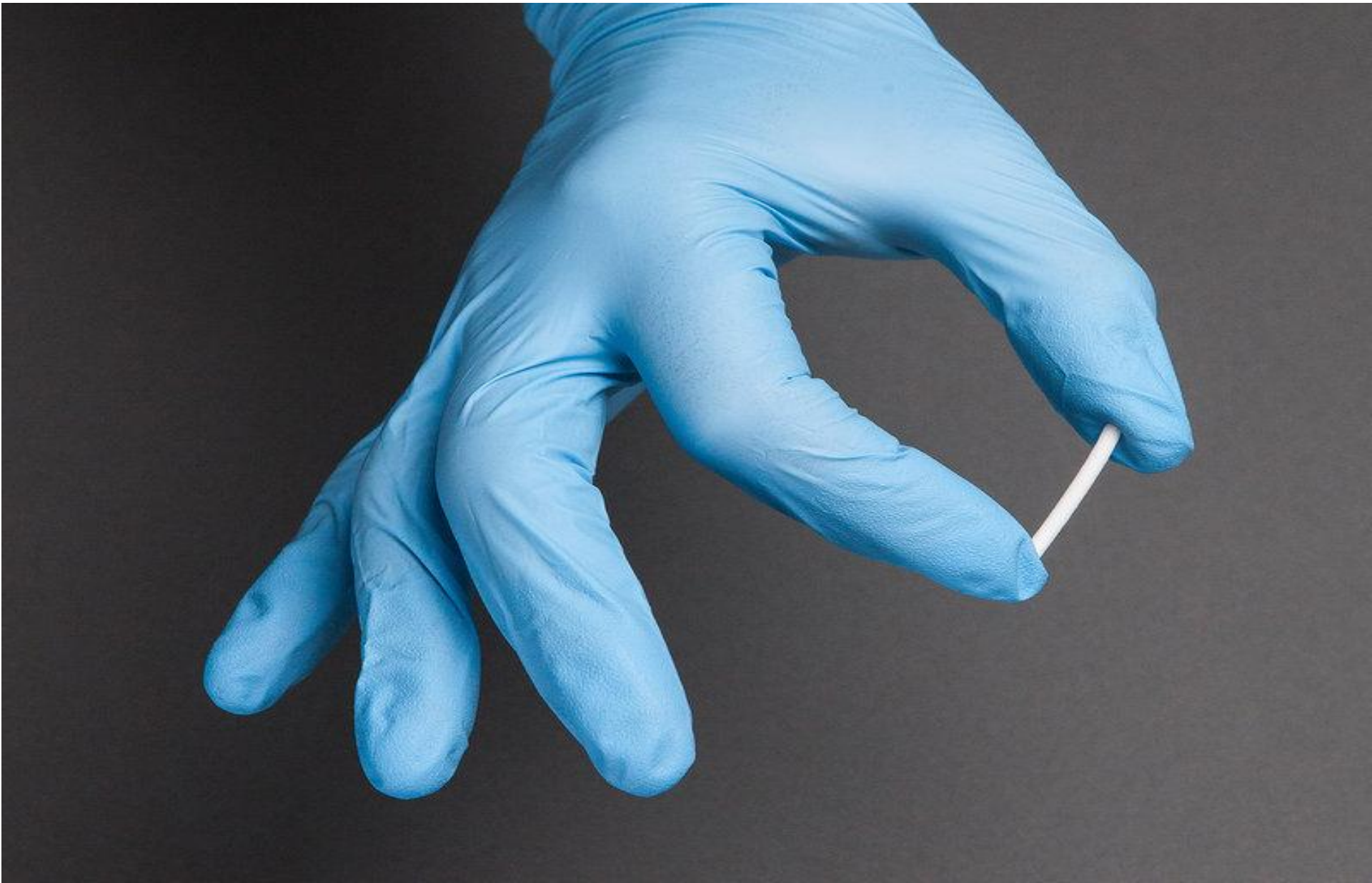
SUBUTEX (BUPRENOPHRINE ONLY)

SUBUTEX CAN BE PRESCRIBED IN 2mg and 8mg DOSES.

INTRODUCED INTO THE BODY VIA SUBLINGUAL ADMINISTRATION (Under the Tongue) OR SUBCUTANEIOUS (Under the Skin)

SUBUTEX (Buprenorphine)

Probuphine (Subcutaneous “time-release” buprenorphine)
Lasts approx. six months



THE MEDICATION SUBUTEX

IS STRAIGHT BUPRENOPHINE

. . . AND. . .

CAN BE ABUSED BY SIMPLY TAKING

MORE THAN RECOMMENDED OR . . .

BY COMBINING SUBTEX WITH OTHER

CENTRALLY ACTIVATING DEPRESSING DRUGS.

(BUPRENORPHIN WITH NALOXONE)

SUBOXONE
(BUPRENORPHINE WITH NALOXONE)

SUBOXONE CAN BE PRESCRIBED IN TWO DOSES (Pill or Film):

(1). 2mg of buprenorphine and 0.5mg of naloxone.

(2). 8mg of buprenorphine and 2mg of naloxone.

INTRODUCED INTO THE BODY VIA SUBLINGUAL ADMINISTRATION (Under the Tongue)

- THE MEDICATION CALLED SUBOXONE COMBINES BUPRENORPHINE WITH NALOXONE.

- ADDING NALOXONE TO BUPRENORPHINE REDUCES THE ABUSE OF OTHER OPIATE DRUGS, BY BLOCKING THEIR CHEMICAL ADMISSION INTO THE Mu AND Kappa OPIOID RECEPTORS.

- COMBINING NALOXONE WITH BUPRENOPRPHINE PREVENTS INTENTIONAL ABUSE,
  1. EITHER BY OVER USE,
  2. DIVERSIONARY TACTICS OR . . .
  3. THROUGH (I.V.) INJECTIONS.

HOWEVER,
WHEN SUBOXONE IS BEING ABUSED,
DIVERTED,
OR
COMBINDED WITH OTHER OPIATE DRUGS
. . .
THE ANTAGNONIST
“BLOCKING“ AGENT
“NALOXONE“
BECOMES ACTIVATED, REPLACING
BUPRENOPHINE . . .
RESULTING IN AN
“SPONTANEOUS“ OPIOID WITHDRAWAL

WITHDRAWAL

THEREFORE,
SUBOXONE CAN NOT BE ABUSED . . .
OR DIVERTED
WITHOUT CREATING AN IMMEDIATE
PHYSICAL WITHDRAWAL.

WITHDRAWAL

THE ADDITION OF NALOXONE ALSO MAKES SUBOXONE SAFE FROM POTENTIAL DRUG OVERDOSING .

HOWEVER, THE COMBINED USE OF ALCOHOL OR ANTI-ANXIETY AGENTS (BENZODIAZEPINES) WITH SUBOXONE IS DANGEROUS AND WILL INCREASE THE RISK OF DRUG OVERDOSE!

OVERDOSE

ANTI-HEROIN VACCINE (60XY-KLH)

- 60XY-KLH was developed by Dr. Kim Janda and Dr. George Koob of the Scripps Research Institute in 2012.

- 60XY-KLH acts like a “molecular sponge”, literally blocking the drugs access to the brain while still in the blood.

- 60XY-KLH has been found to be effective with substances like heroin and oxycodone, but does not appear to interfere with other pain medications like fentanyl.

- Current studies have only been conducted with rats, not humans. (Journal of Medicinal Chemistry: Issue 14: Pages. 5195-5204, June 21, 2011)

A possible new non-opioid compound

Researchers at the Univ. of Utah, have found a sophisticated chemical "RgIA4" in tiny sea snails that blocks the activity of an entirely new pain pathway-receptor, known as "?9?10nAChR".

The presence of RgIA4 has proven to provide long-term pain relief in animal studies more effectively than conventional opioid compounds.

In todays presentation we reviewed the following:

- **The three (3) objectives of medication management.**
- **Medications used in the treatment of substance related disorders.**
- **Anti-Opioid medications and how they work on the body.**
- **Anti-Opioid medications and how they are recommended.**

CONTACT INFORMATION:

CARL M. DAWSON, M.S., MAC, LPC

1320 E. KINGSLEY SUITE "A"
SPRINGFIELD, MO. 65804

e-mail: (CarlMDawson@MissouriState.edu)