

Medication Assisted Treatment for Substance Use Disorders

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Medication- Assisted-Treatment



THE PREVALENCE OF DEPENDENCE IN THE UNITED STATES

OPIOID

74%

Opioid dependence has increased by 74% from 1990–2010.

1 in 3

people with opioid dependence used pharmacotherapy in 2007.

ALCOHOL

Almost

1 in 25

people met the criteria for alcohol dependence in 2001.

1 in 4

people with alcohol dependence used pharmacotherapy in 2011.

→ **Adherence to a treatment plan is critical.** Persistence with treatment is needed to enhance retention and increase abstinence.

References: 1. Degenhardt L et al. *Lancet*. 2013;382(9904):1564-1574. 2. Knudsen HK et al. *J Addict Med*. 2011;5(1):21-27. 3. Grant BF et al. *Drug Alcohol Depend*. 2004;74(3):223-234. 4. Hasin DS et al. *Arch Gen Psychiatry*. 2007;64(7):830-842. 5. Weiss RD. *Addiction*. 2004;99(11):1382-1392.

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ADDICTION IS A DISEASE

Addiction is a chronic, relapsing brain disease that changes how the brain works and affects behavior.

Addiction is defined by an uncontrollable urge to seek and use drugs or alcohol, despite the problems they cause.

People with addiction cannot simply stop using drugs or alcohol for a few days and be cured of their addiction. Most patients need ongoing care.

Reference: 1. National Institute on Drug Abuse (NIDA). <https://www.drugabuse.gov/publications/drugfacts/treatment-approaches-drug-addiction>. Accessed July 3, 2017.

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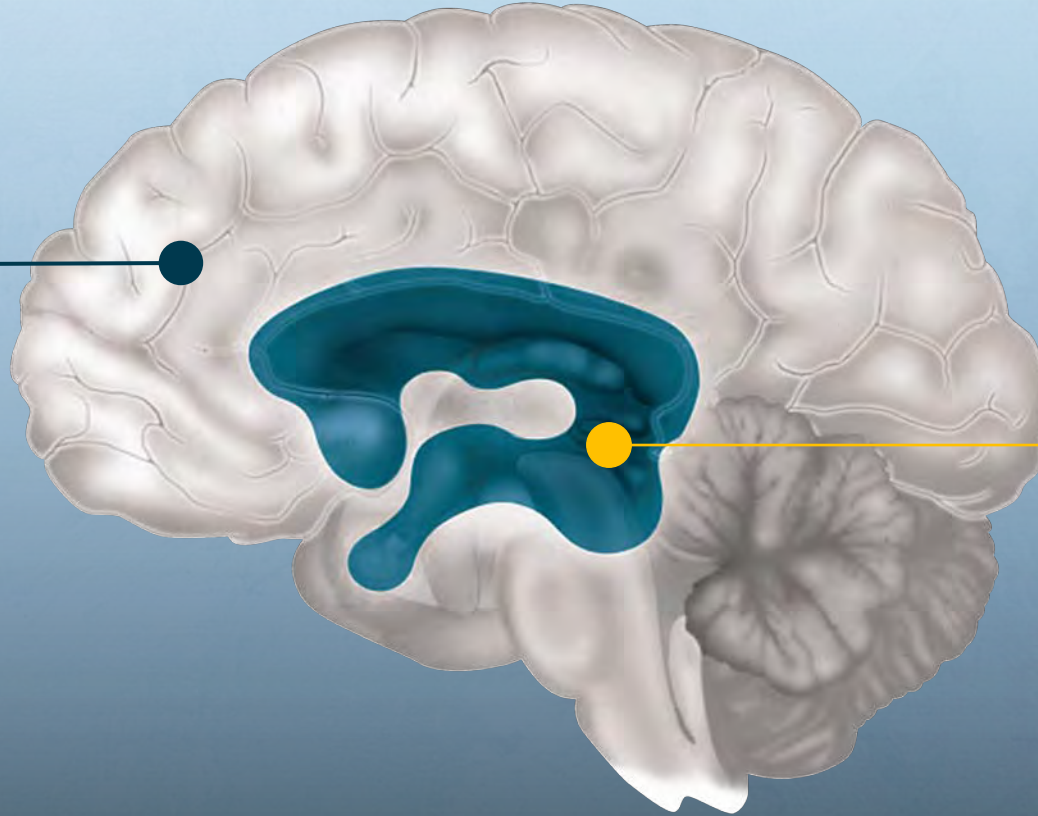


UNDERSTANDING THE BRAIN

▶ BRAIN REGIONS ASSOCIATED WITH DEPENDENCE

Cortex

- Decision-making
- Thinking
- Reasoning
- Planning



Limbic System

- Basic drives and urges
- Rewards
- Pleasure

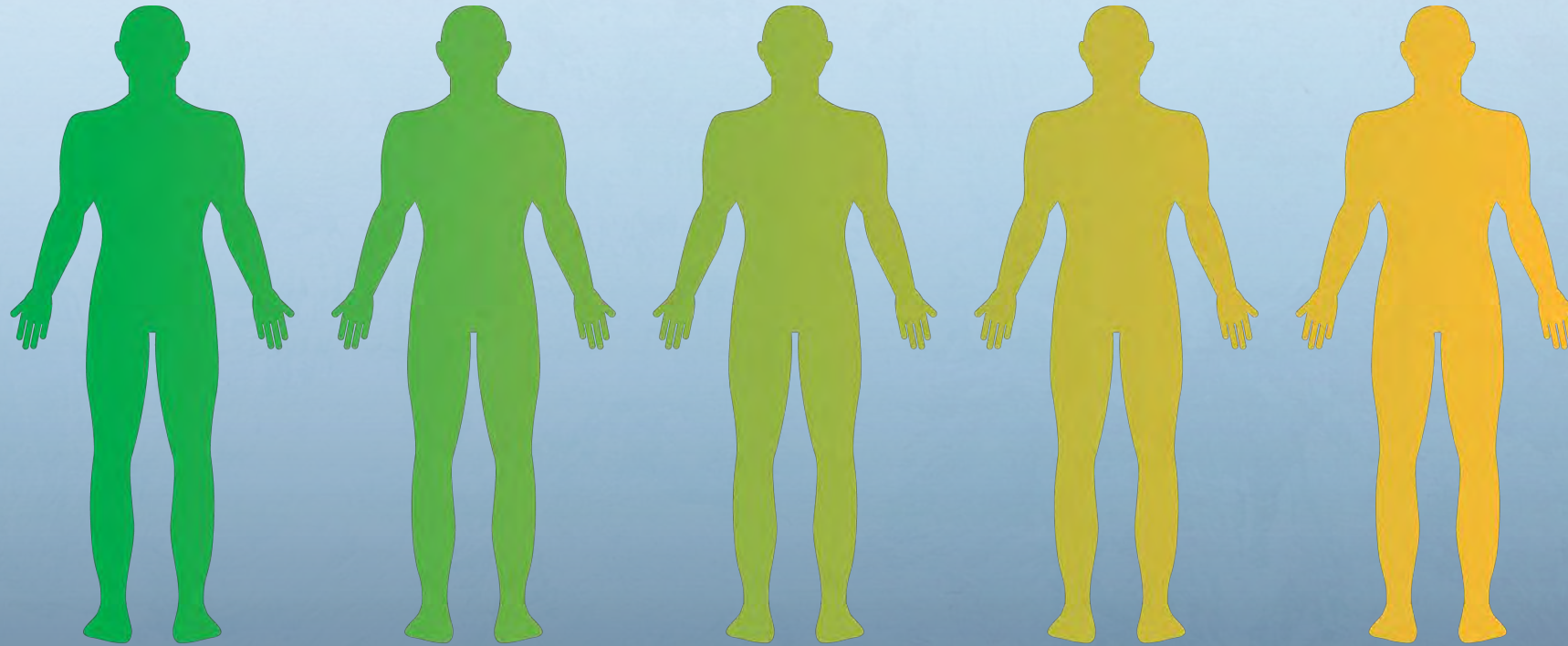
Reference: 1. National Institute on Drug Abuse (NIDA). <https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/preface>. Accessed July 3, 2017.

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THE BRAIN AND CHRONIC OPIOID USE



FIRST TIME OPIOID USER

OPIOID DEPENDENT

OPIOID USE OVER TIME

■ Low Opioid Tolerance ■ High Opioid Tolerance

References: 1. Kosten TR, George TP. *Sci Pract Perspect*. 2002;1(1):13-20. 2. Adinoff B. *Harv Rev Psychiatry*. 2004;12(6):305-320. 3. Goldstein RZ, Volkow ND. *Am J Psychiatry*. 2002;159(10):1642-1652. 4. National Institute on Drug Abuse (NIDA). <https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/preface>. Accessed July 3, 2017.

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ADDICTION TREATMENT IS NOT ONE SIZE FITS ALL

“No single treatment is appropriate for everyone....Matching treatment settings, interventions, and services to an individual’s particular problems and needs is critical to his or her ultimate success....”

—National Institute on Drug Abuse

Reference: 1. National Institute on Drug Abuse (NIDA). <https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/preface>. Accessed July 3, 2017.

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Mechanism of forming Opioid Dependence – Receptor Up-Regulation:

Repeated exposure to Opioids:

- Brain cells make more Opioid receptors to adapt to the presence of Opioids
- Vicious cycle of receptor Up-Regulation
 - The more receptors there are, the more Opioids are needed to obtain the same effect
 - The more Opioids there are, the more receptors are made
- Receptors remain constantly in the “active” state




Neurobiology of Addiction and Reward

- <https://www.youtube.com/watch?v=7VUIKP4LDyQ>

Types Of Medication Assisted Therapies

Agonists, antagonists and partial agonists

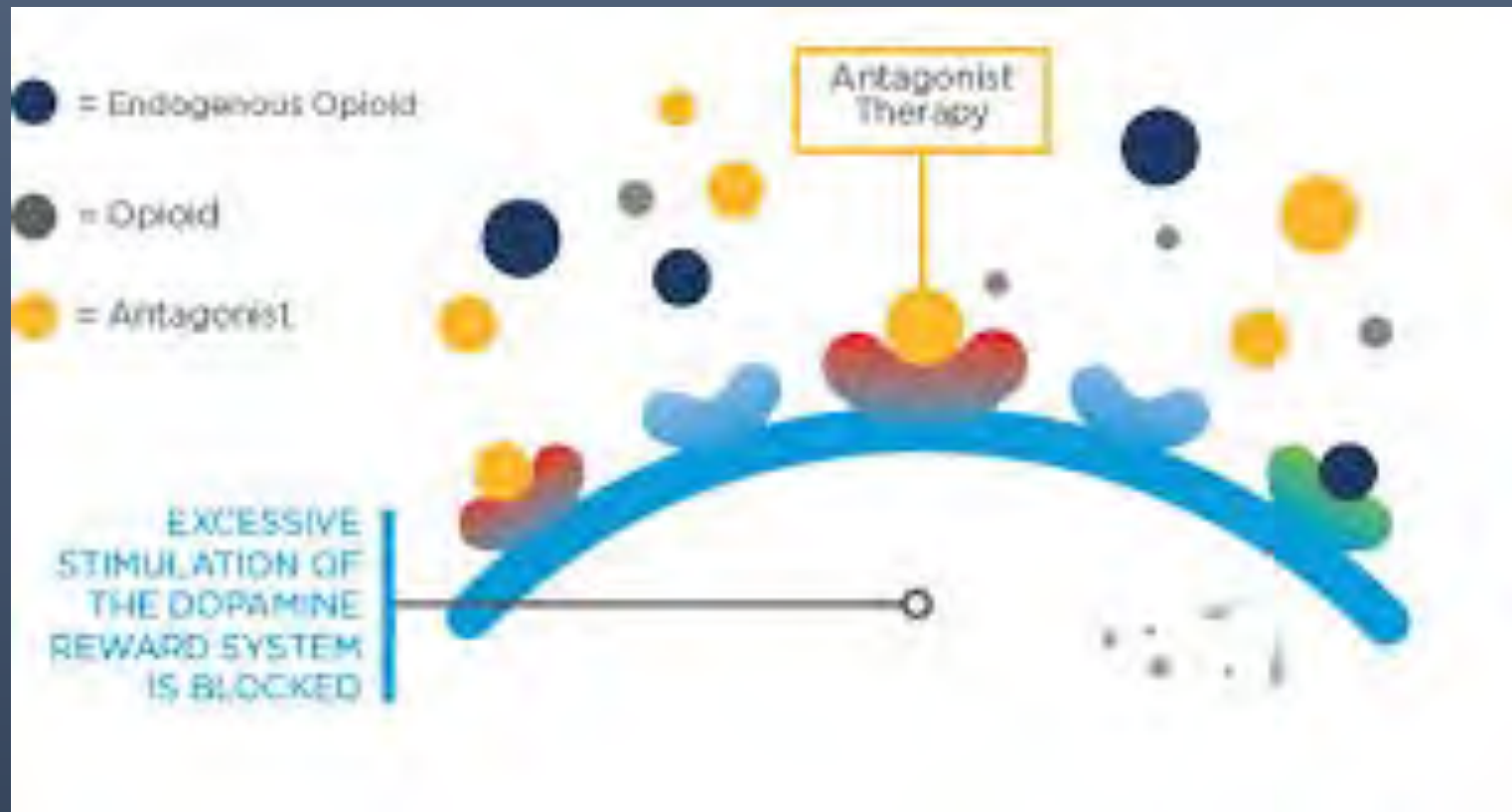
- Agonists occupy receptors, produce a conformational change which leads to receptor activation and thus efficacy
 - Antagonists occupy receptors, produce no conformational change and prevent the action of agonists
 - Partial agonists occupy receptors, produce an effect which is less than the maximum obtainable with a full agonist and may displace an agonist in certain situations
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Medication Assisted Treatment for Opioid Use

- Naloxone-Antagonist
 - Naltrexone
 - Vivitrol
 - Naltrexone implant
 - Narcan
- Methadone- full-agonist
- Buprenorphine- partial-agonist
 - Suboxone
 - Subutex

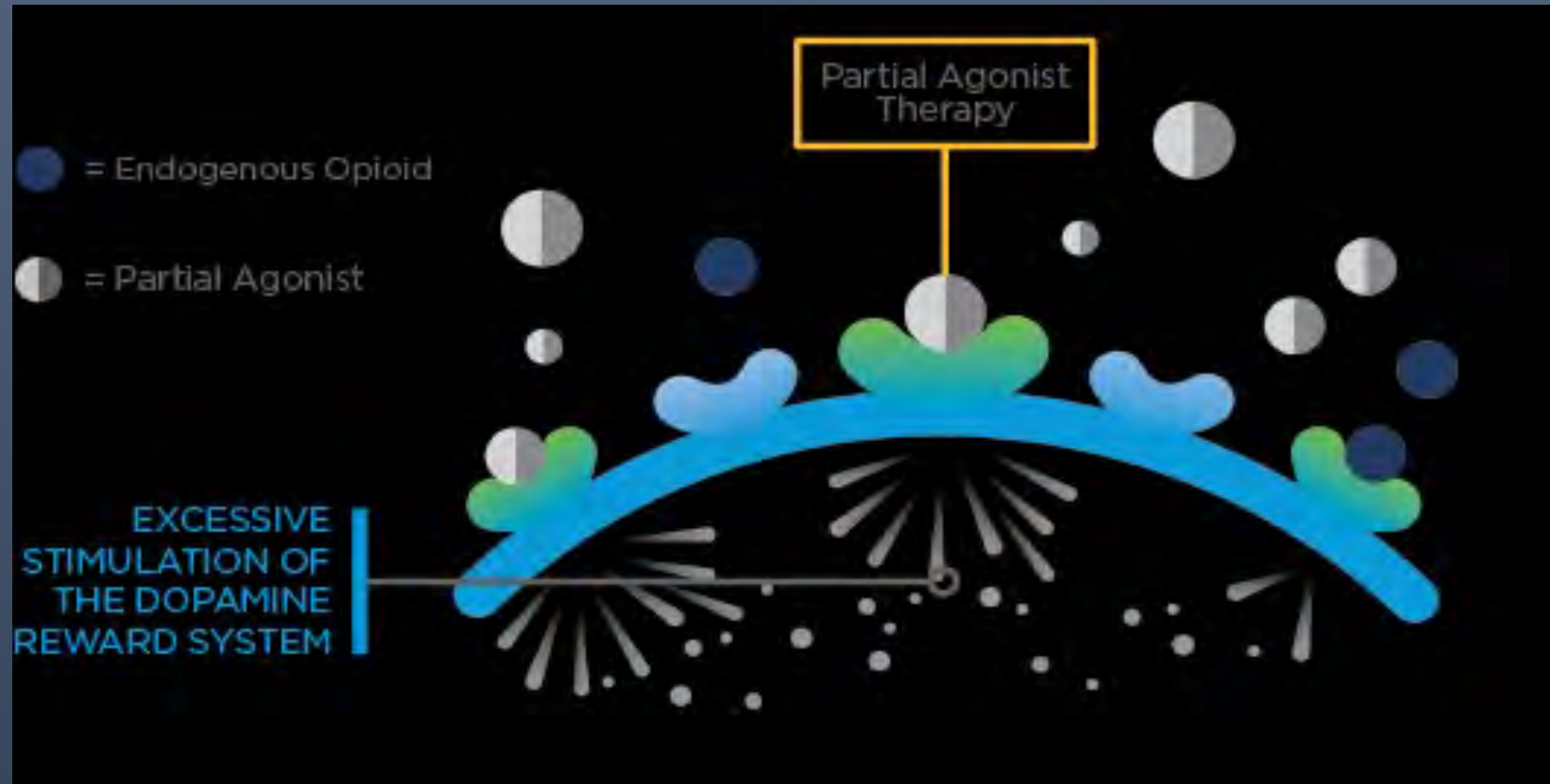
Antagonist Therapy

Naloxone/Naltrexone/Vivitrol



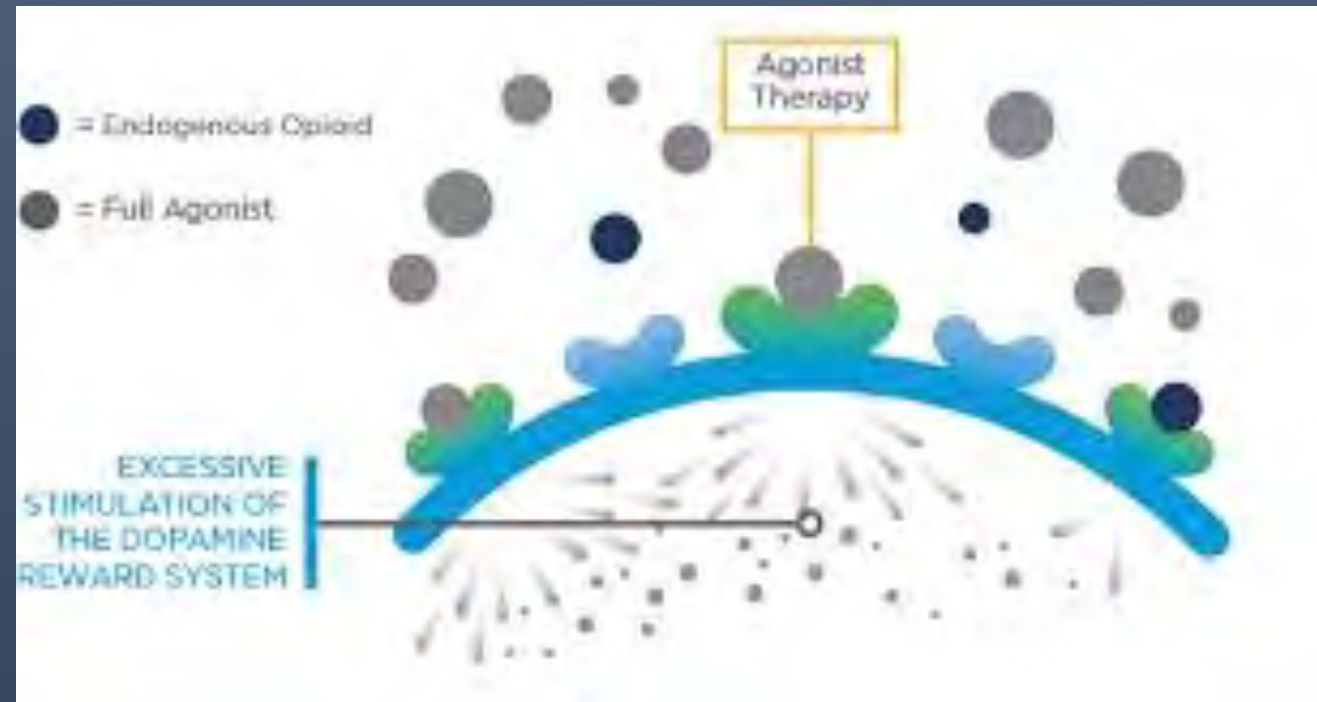
Partial Agonist Therapy

Suboxone/Subutex/
Subsolv/Sublocade

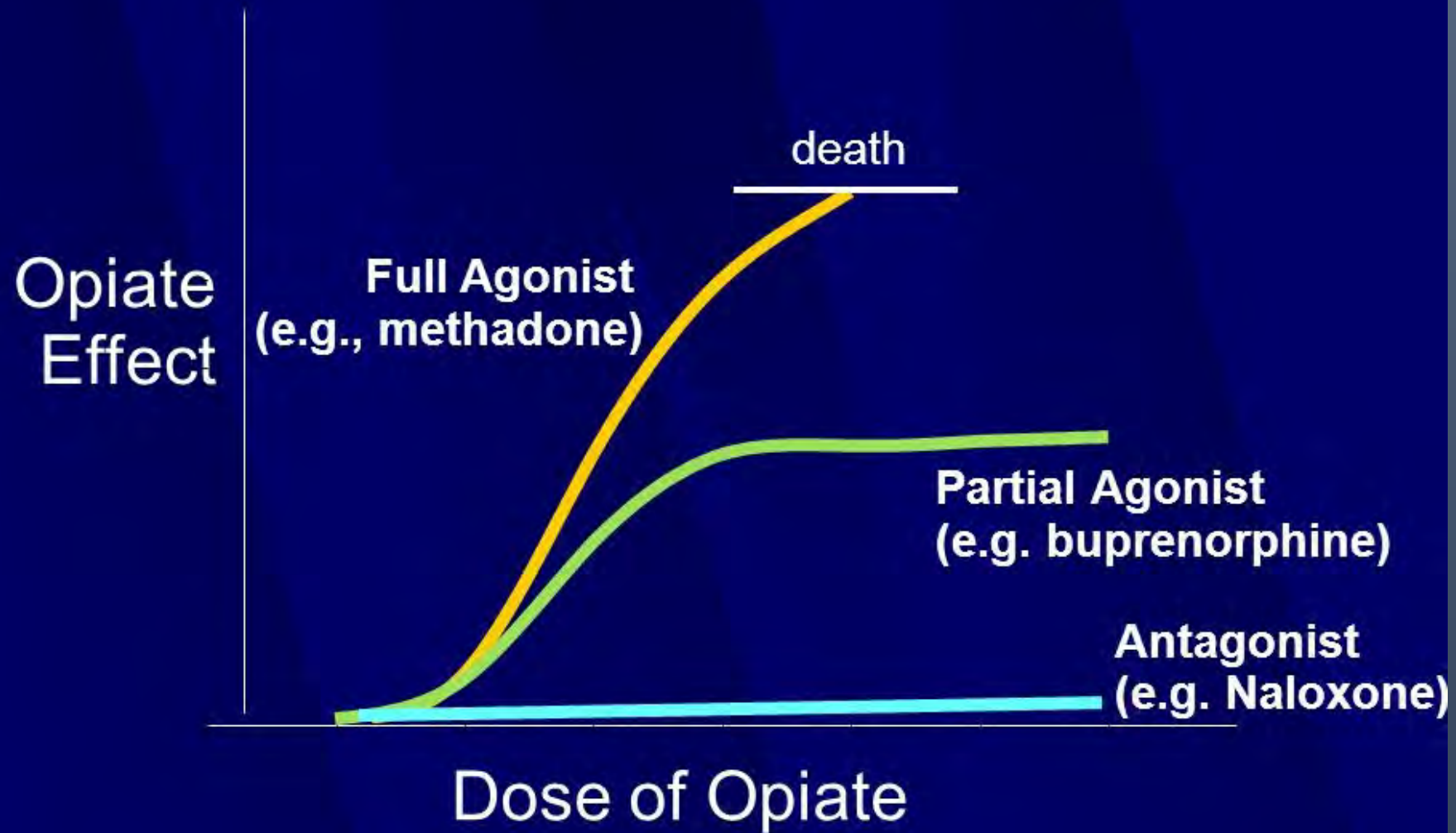


Full Agonist Therapy

Metadone



Partial vs. Full Opioid Agonist



Medication Types for Treating Opioid Use Disorders

	AGONIST THERAPY	PARTIAL AGONIST THERAPY	ANTAGONIST THERAPY
Binds to μ Opioid Receptor	YES	YES	YES
Activates μ Opioid Receptor to Release Dopamine	YES	YES but not to the extent of a full agonist	NO
Administration	Daily oral concentration	Daily sublingual film, sublingual tablet, buccal film, or six-month subdermal implant	Daily oral medication or monthly intramuscular injection
Setting	Provided at certified opioid treatment program settings	Sublingual film, sublingual tablet, or buccal film can be initially provided in a physician's office then as a take-home medication. The six-month subdermal implant requires HCP administration.	Daily oral can be provided as take-home medication. Monthly injection requires HCP administration.
DEA Schedule	Schedule II controlled substance	Schedule III controlled substance	Not scheduled
Requires Detox	NO	NO	YES
Requires Counseling	YES	YES	YES

Strength and Limitation Considerations

- Agonist and partial-agonist Rx
 - Long half life = difficult to get off
 - Heroin- 30 mins
 - Buprenorphine – 24-48 hrs
 - Methadone -10 40 hrs.
 - Anhedonia
 - Hormone interactions
 - Chronic pain benefits
 - Retention

Strength and Limitations Continued

- Antagonist
 - Dysthymia
 - Chronic pain/injury
 - Prescription Adherence
 - Bloodwork
 - Hepatic contraindications
 - No withdrawal
 - Abstinence commitment
 - No psychological impairment

Strength and Limitations Continued

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Other Medication Assisted Treatment Options for Substance Use Disorders

- Naltrexone/Vivitrol- Alcohol
- Acamprosate/Campral-Alcohol
- Disulfiram/Antabuse-Alcohol
- Bupropion/Wellbutrin- Cocaine/Nicotine

Additional Medications (Comfort Meds)

- Gabapentin-anti-convulsant, decrease anxiety
- Clonidine- Beta Blocker, reduce HR, decrease anxiety
- Hydroxyzine-antihistamine, decrease anxiety
- Bentyl- GI discomfort
- SSRI's- anti-depressants
- Bupropion- anti-depressant
 - NDRI

RECOVERY IS A LIFELONG JOURNEY

- As with other chronic diseases:
 - Successful treatment of addiction usually requires **continual evaluation and modification**
 - There is a need for **continued support**, such as:
 - Psychosocial treatment
 - Family and peer support
 - When relapse occurs, it should **signal a need for treatment to be reinstated or adjusted**

Reference: 1. National Institute on Drug Abuse (NIDA). *Principles of Drug Addiction Treatment: A Research-based Guide*. 3rd ed. <https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/preface>. Accessed July 3, 2017.

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COUNSELING

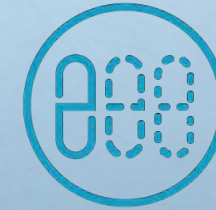
COUNSELING IS THE FOUNDATION FOR A COMPREHENSIVE TREATMENT PLAN.
GOALS OF COUNSELING MAY INCLUDE:



Addressing a client's
motivation to change



Replacing drug-using
activities with constructive
and rewarding activities



Providing incentives
for abstinence



Building skills to resist drug
use and prevent relapse



Improving
problem-solving skills



Facilitating better
interpersonal relationships

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AA's View Medication in Recovery

- Some A.A. members must take prescribed medication for serious medical problems. However, it is generally accepted that the misuse of prescription medication and other drugs can threaten the achievement and maintenance of sobriety. It may be possible to minimize the threat of relapse if the following suggestions are heeded:
 - No A.A. member should “play doctor”; all medical advice and treatment should come from a qualified physician.

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