CONNECTING THE DOTS ... OPIOID USE AND NEUROSCIENCE: IMPLICATIONS FOR OUR TREATMENT SYSTEM

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Learning Objective

- Commit to make ONE change that will contribute to and more effectively support long-term recovery and other positive outcomes for persons with opioid use and other substance use disorders (OUD/SUDs).

Source this quote…

"Today feels like a great day to develop an addiction to drugs so bad that I will risk my health, my family, my job, my dignity, my future, my freedom and possibly even my life."
Source?

ANSWER…

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ANSWER…

NO ONE!!!!

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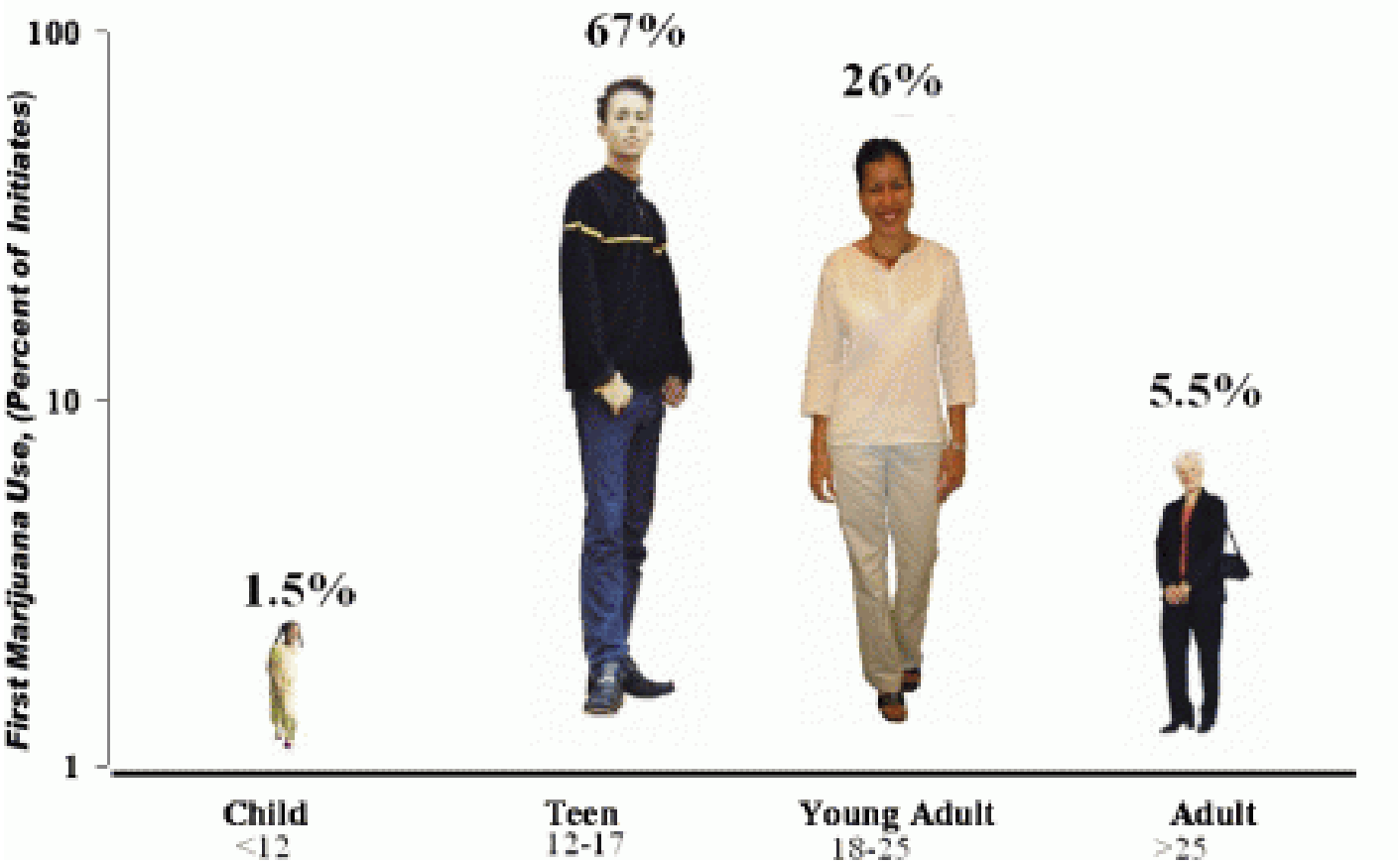
Pathways to opioid/other substance use are varied and complex!

Developmental Disease: SUD Starts Early![1]



We often see this… rather than their pathway.

Significant trauma histories/current experience

Individuals with SUD/OUD often have significant and complex histories of physical and sexual abuse, abandonment, loss, and associated trauma (for Native populations historical trauma) adversely affecting their ability to engage in/comply with programming.

Refresher: Brain science and SUD/OUD[1]

CHOICE? While the initial decision to use substances is often voluntary,* the brain changes that occur over time challenge a person's self control and ability to resist intense impulses urging them to continue using substances.

* Coercion is often a factor

Internal (endogenous) opioids[2]

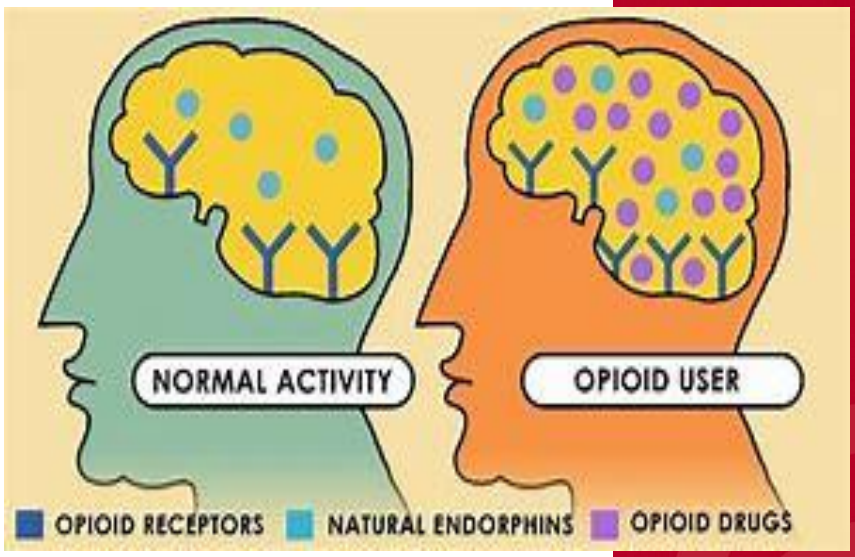
- Internal (endogenous) opioids are a natural part of the body's chemistry.
- Endorphins are a common type of internal opioid that works in the brain and spine.
- Internal opioids help limit pain when we are injured and contribute to the experience of pleasure and joy by releasing dopamine.

Dopamine[3]

Dopamine is one of the chemicals in the brain that is essential for human survival.

Dopamine is released when we enjoy good food, have sex, give birth, or see our baby.

This way our brains are wired to ensure that we will repeat life-sustaining activities by associating those activities with pleasure or reward.



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Dopamine cont.

- Often the dopamine system isn’t working right in people with depression.

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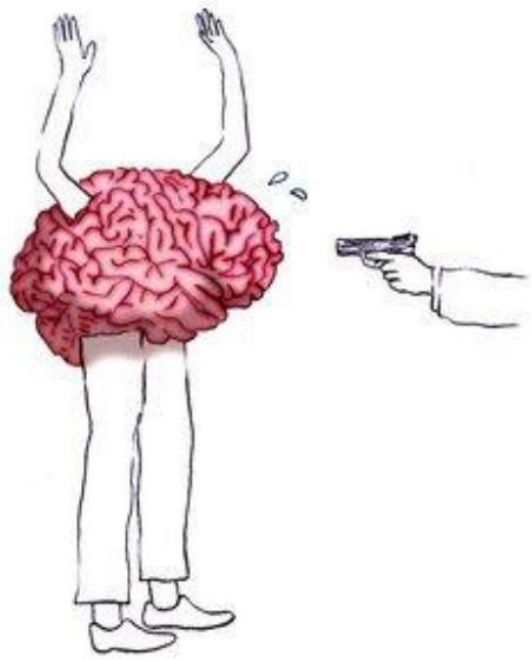
Exogenous (External) Opioids[4]

Exogenous opioids are those introduced from outside the body such as heroin, or pain meds.

Because their chemical structure is similar to our naturally occurring opioids, they highjack the body's natural reward system flooding the brain with overwhelming amounts of dopamine.

All drugs of abuse cause huge amounts of dopamine to be released but each one does it differently.



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The Brain's Reward System[5]

- The brain reacts to the huge floods of dopamine by releasing less and less dopamine in response to both internal and external opioids
- This means the person no longer feels joy looking at their baby and very soon, no longer feels high when taking opioids.
- Very quickly the dopamine reward system becomes so unresponsive that without the external opioids the person feels profound physical and emotional distress and use the external opioids to escape these negative feelings without feeling "high" anymore.

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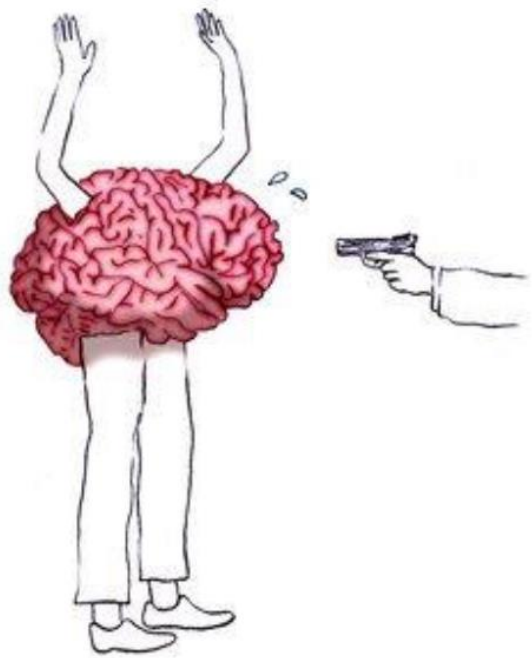
Cascade and a vicious cycle

- Drug use causes frequent abrupt changes to what should be a finely balanced chemical system, overwhelming cascading circuits in multiple brain regions, impacting **learning and memory, emotion, judgment and self-control.**
- The trauma, humiliation, social degradation, shame over one's actions and the harms caused others while using drugs can be practically and emotionally overwhelming to face without drugs.



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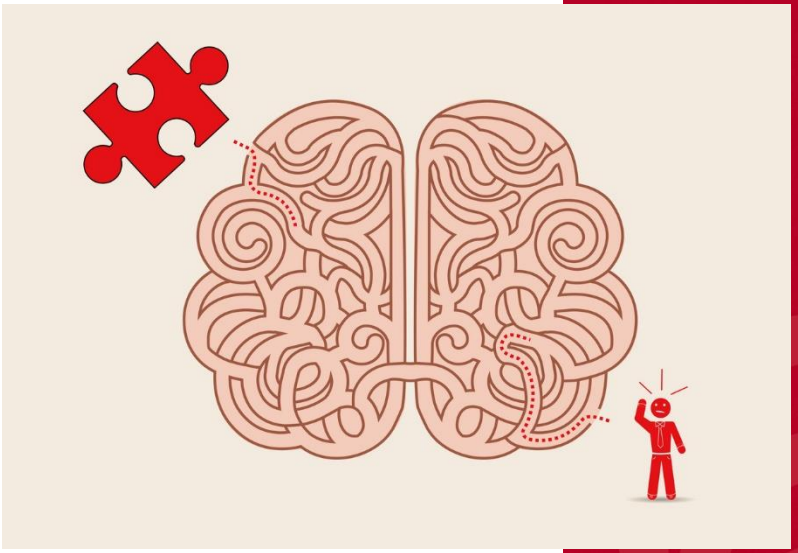
Brain rebalancing takes time.[6]

- The changes in the brain caused by opioid dependence will not correct themselves right away, even though opioid use has stopped.
- These changes can trigger cravings for the drug months and even years after a person has stopped using opioids.
- Mental and physical health problems that may have contributed to starting drug use or been caused by drug use also need to be addressed for people to move forward.



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Rebalancing/Restorative Treatment[7]

- Overcoming opioid dependence is not simply a matter of eliminating opioid substances from the body.
- Unless restorative, rebalancing treatment is provided, these functional brain imbalances can result in worsening or sabotage of recovery attempts.
- Medication-based treatment will help those damaged neural networks start getting back to normal faster than going it alone.

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“Not offering opioid treatment medications to someone who needs them “is like not offering insulin to someone with diabetes.”

“…Nora Volkow (Director of NIDA, 7.8.19)

"…With the medications, you're creating stability in the brain, and that helps recondition it to respond to everyday pleasures again." Nora Volkow (Director of NIDA, 7.8.19)

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SUD/OUD disrupts neurocircuitry affecting a person's ability to…[8]

- Prioritize beneficial behaviors over destructive ones
- Exert control over these behaviors **even when associated with catastrophic consequences!**

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“It’s like God tells you that if you take another breath, your children will die. You do everything you can not to take a breath. But eventually you do. That’s what it’s like. Your brain just screams at you.”

Greenville SC person in recovery
11/2019

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Opioid Withdrawal

- Excessive perspiration.
- Shaking and muscle spasms.
- Severe muscle and bone pain.
- Vomiting, nausea, and diarrhea.
- Irritability.
- Insomnia.
- Restlessness.
- Dilated pupils.
- Rapid heart rate/anxiety.
- Death is not likely from opioid withdrawal, but people may feel like they’re dying.

Opioid Preoccupation

"To my caseworker, I blame long hours at my job for my strange sleeping patterns and frequent absences, I have no job. I'm just always on the hunt for more heroin. My opioid addiction has taken me over."

"My life is broken down into four- to five-hour increments to get high, to put off feeling sick."

Diverted Finances

"I need heroin to feel normal. I don't love anymore. Now I'm sick. I can't afford the heroin that I need. How did $10 used to get me high? Now I need $100."

Opioid Procurement

"I grab my keys and head to my car, throw my kid in the back seat and off I go to the neighborhood I usually cop in. The drive always feels longer than it is when your withdrawals are kicking in again. I call my dealer and he says it's going to be 10 minutes which I know isn't true, I'm looking at around at least 45 minutes to an hour. I check my phone waiting for him to call, I'm starting to get dope sick again."

Opioid Consumption

"My dealer gives me what I need, now I need to find a good bathroom; I can't wait to get home to use. I find one of my favorites; single stalls give you more privacy and time. I park out front and walk straight to the back where the bathrooms are. I'm obsessed with the ritual of shooting up, the water, the mixing the pop of my vein when the needle goes in. I release the belt and the heroin floods my brain. Wandering back out to my car I get some looks from customers like they know, but I really don't care."

Stigma

- Despite the brain science, OUD and other SUDs are among the most stigmatized conditions in the world due to two main factors:
  - Perceived control that a person has over the condition; and
  - Perceived fault in acquiring the condition.

WWYW?

- Broke (financially and personally)
- Tired
- Traumatized/Scared
- Homeless/Or at risk of becoming
- Unemployed/Underemployed
- No transportation
- Parent
- Clouded mental functioning
- Multiple/often conflicting required appts.

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POOR
HOMELESS
CJ HISTORY
DV SURVIVOR
TRAUMA VICTIM
SINGLE PARENT/ PREGNANT
LOW JOB SKILLS
4 X DAY OPIOID USER
NO TRANSPORTATION
3RD GENERATION SUBSTANCE USER
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Don't worry!
We can squeeze you in every Wednesday from 3:00-4:00 starting in 2 weeks


DEAD END
DEAD END
DESTINATION RECOVERY
CAUTION
INEFFECTIVE
CAUTION
SHORT DURATION
CAUTION
EXCLUSIONARY CRITERIA
CAUTION
INFRASTRUCTURE BARRIERS
DEAD END
CAUTION
WAITING LISTS
DEAD END
TOLL ROAD
CAUTION
LOW INTENSITY
TOLL ROAD
CAUTION
MISALIGNED POLICIES
CAUTION
FINANCIAL BARRIERS
DEAD END
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Examples from the field…

- Retains too few (less than 50% national treatment completion rate)
- Daily F2F treatment requirements

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Examples from the field…

- Kicked out for confirming their diagnosis (for no other major health problem is a person thrown out for becoming symptomatic in the service setting).
- Methadone discharge for cannabis

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Examples from the field…

- Does not accommodate families (about 3% of residential programs allow mothers and children together).
- Sophie's choice/Your recovery or your children/or some of your children; NAS example

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System failure

"We are routinely placing individuals with high problem severity, complexity, and chronicity in treatment modalities whose low intensity and short duration offer little realistic hope for successful post-treatment recovery maintenance. For those with the most severe problems and the least recovery capital, this expectation is not a chance, but a set-up for failure—a systems failure masked as personal failure." (Bill White, 2013)

WCYD?

- In response to advances in our understanding of brain development and of the role of genes and environment on brain structure and function…what is our individual and collective responsibility?
- How do we apply this knowledge in practice…in program design and in implementation?

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May the force be with you!

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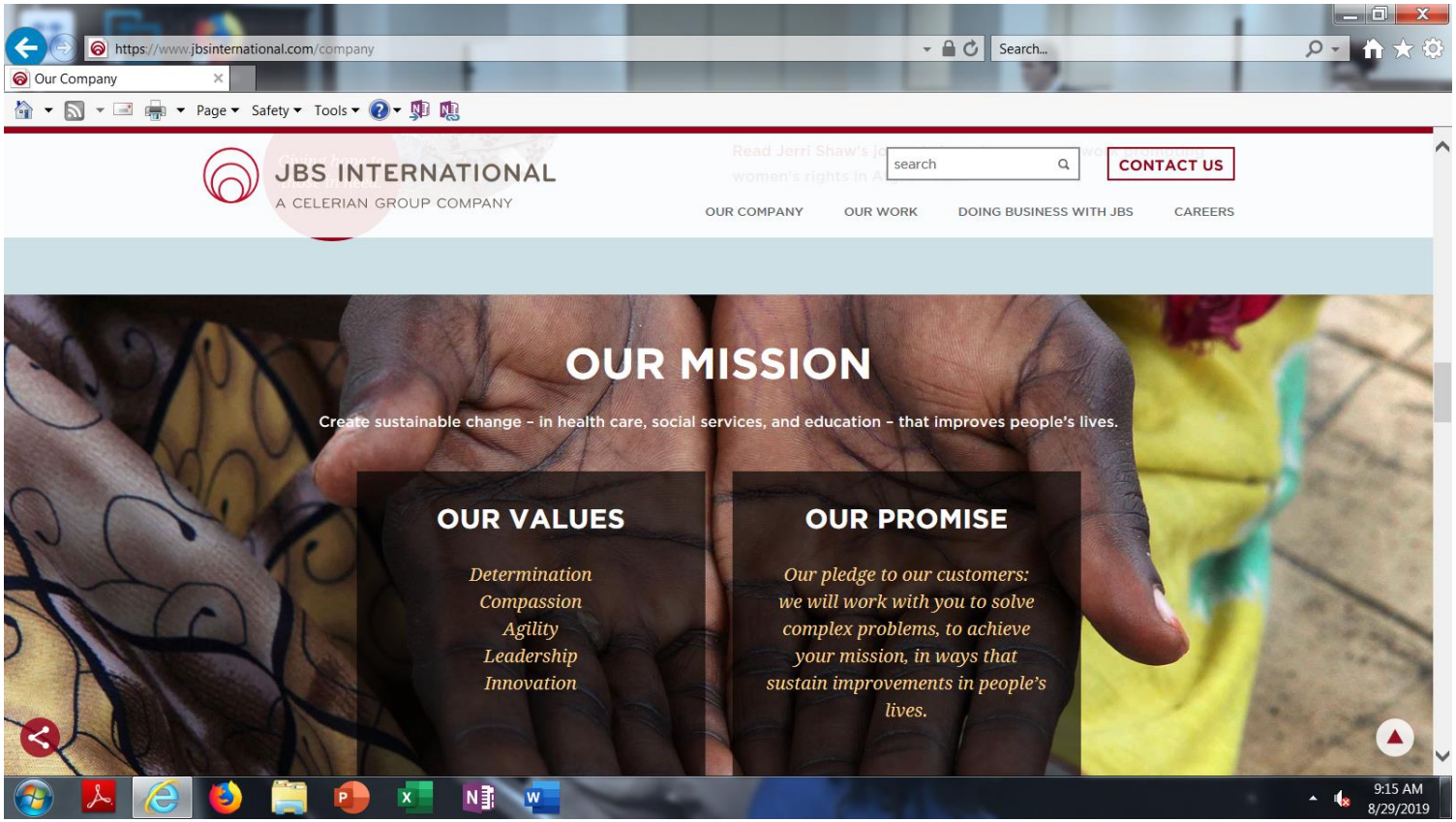

Questions/Information about this presentation:

Pam Baston 828 817 0385

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CITATIONS

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2. http://www.drugabuse.gov/publications/drugfacts/understanding-drug-abuse-addiction; and https://www.ncbi.nlm.nih.gov/books/NBK424849/

3. Sprouse-Blum AS, Smith G, Sugai D, Parsa FD. Understanding endorphins and their importance in pain management. *Hawaii Med J*. 2010;69(3):70-1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3104618/

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