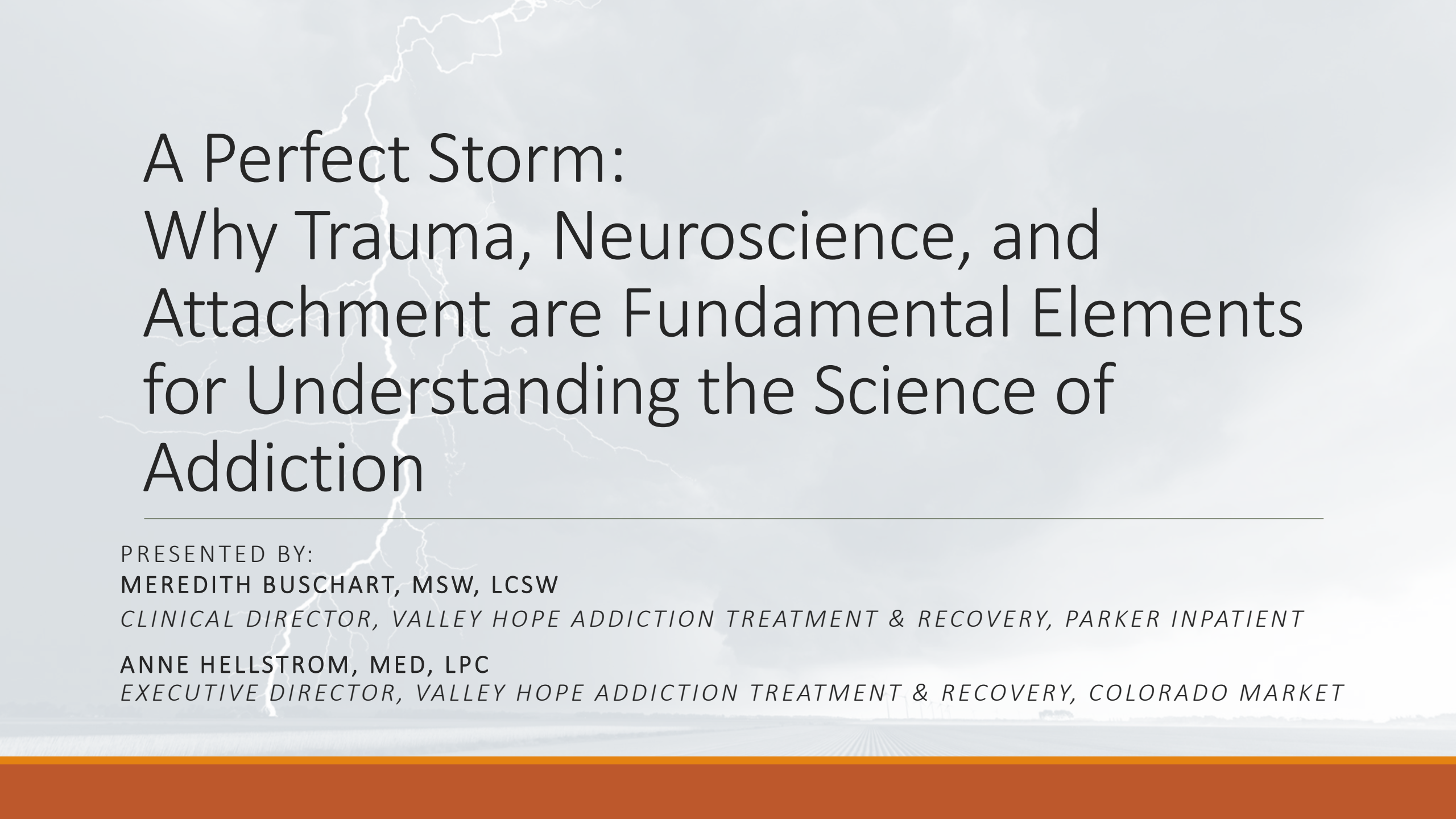




A Perfect Storm: Why Trauma, Neuroscience, and Attachment are Fundamental Elements for Understanding the Science of Addiction

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Understanding addiction as a chronic, relapsing illness

Understanding the intersectionality of trauma, attachment and the neuroscience of addiction

Overlapping Themes in the Neuroscience of Trauma and the Neuroscience of Addiction

Acknowledging addiction as an adaptive coping strategy and a biological-based illness

Applying a trauma-sensitive practice as care providers in understanding and treating addiction

Today....

Understanding Addiction

A chronic illness

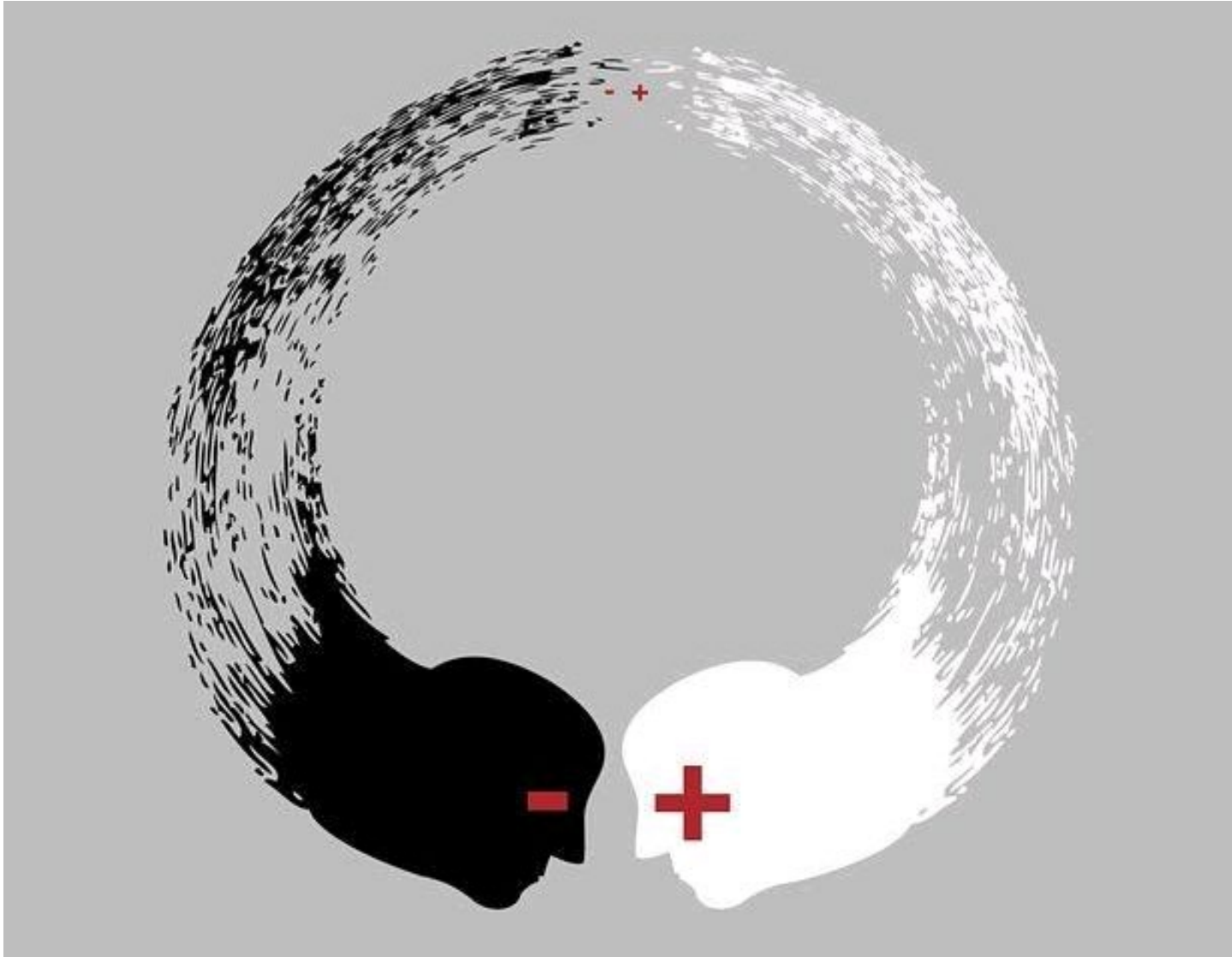
10 separate classes of drugs in the DSM-5 (i.e. alcohol, hallucinogenics, opioids, etc)

Impaired control, social impairment, risky use, and pharmacological criteria all considered within the DSM for diagnostic assessments

Cravings, Withdrawals, Relapse Proneness are marked indicators

Multi-faceted in its impact and implications

An effective (maladaptive) coping skill!



Shifting Conceptualization of Addiction and Trauma

What's wrong with you?

vs.

What happened to you?

Sarah's Story....

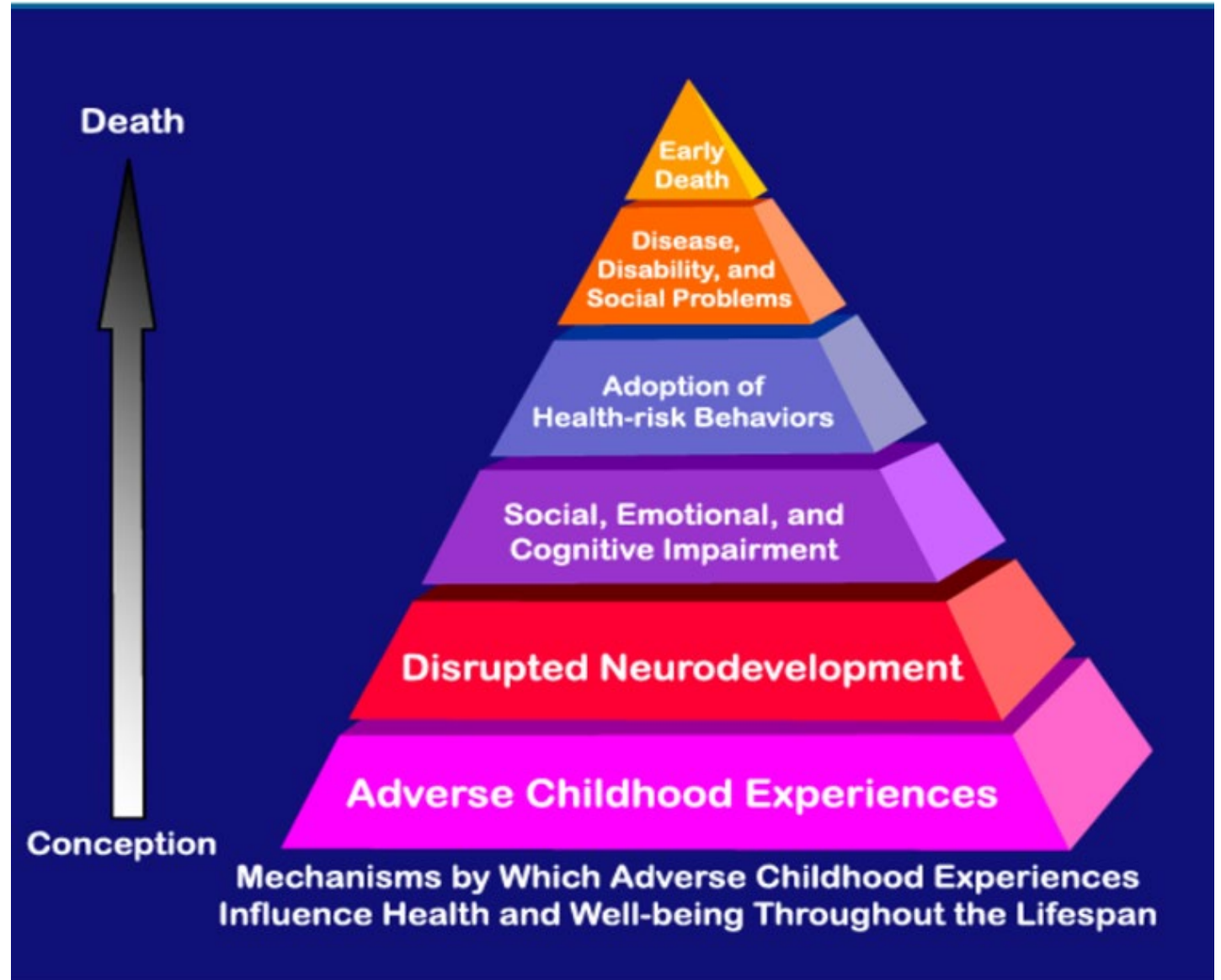
The Adverse Childhood Experiences (ACES) Study

Adults in the US:

68%- 1 or more

25%- 3 or more

16%- 4 or more



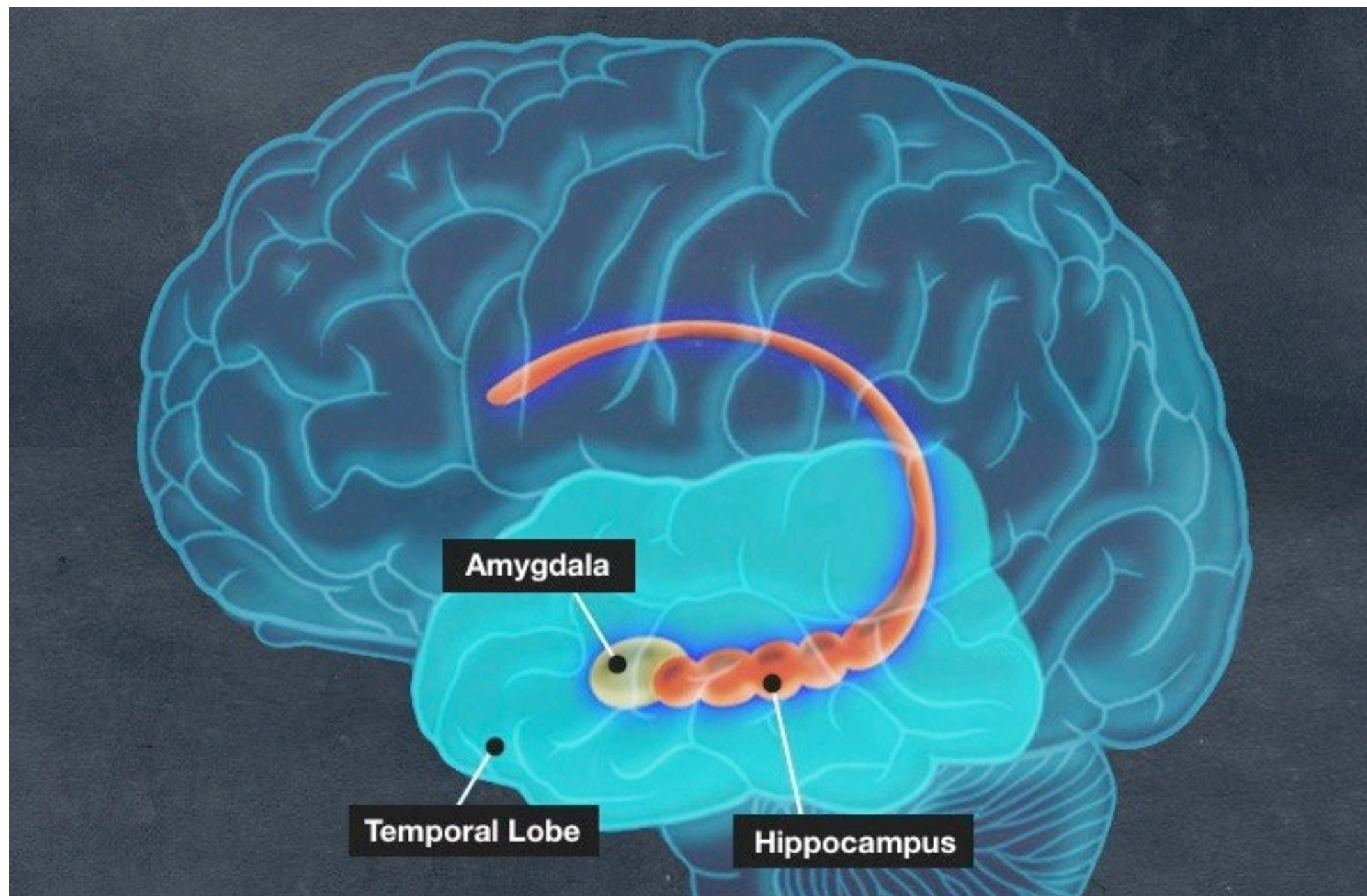
The Body Keeps the Score *(Part 1)*

“The most important job of the brain is to ensure our survival, even under the most miserable conditions. Everything else is secondary. In order to do that, brains need to:

- 1) Generate internal signals that register what our bodies need (food, sex, shelter, protection)
- 2) Create a map of the world to point us to where we go to satisfy those needs
- 3) Generate the necessary energy and actions to get us there
- 4) Warn us of dangers and opportunities along the way
- 5) Adjust our actions based on the requirements of the moment...



Psychological problems occur when our internal signals don't work, when our maps don't lead us to where we need to go, when we are too paralyzed to move, when our actions don't correspond to our needs, or when our relationships.” (pg 55)



Brain and Trauma – Limbic System

“The Emotional Brain”

Trauma stops and alters brain development

HIPPOCAMPUS

- Houses the emotional memories and a constant experience of stress may actually damage the hippocampus
- Regulates a person's ability to overcome fear responses.
- Functions like a memory chip on your computer
- “What fires together, wires together!”

AMYGDALA

- Emotional processing and integration of emotions
- Where fear is stored from previous traumatic experiences
- This is the area of the brain where the person is in “survival mode”
- Under stress the amygdala becomes more active and interferes with Hippocampus functioning

HOW TRAUMA REWIRES THE BRAIN

Trauma isn't weakness.
It's your brain trying to survive.



Prefrontal Cortex
(Thinking Brain)

LESS ACTIVE

When this area slows down, logical thinking and emotional control become harder. You may "know" you're safe, but your brain struggles to feel it.



Amygdala
(Alarm System)

ON HIGH ALERT

This part becomes overactive. It scans for danger constantly, even when there isn't any. Result? Anxiety, hypervigilance, feeling "on edge."



Hippocampus
(Memory Center)

WEAKENED RESPONSE

It helps you tell past from present. When affected by trauma, memories can feel like they're happening "right now."



Language Center
DIFFICULTY EXPRESSING IT

Trauma can make it hard to put experiences into words. Sometimes the body remembers what the mouth can't say.

✧ ✧ Trauma doesn't mean you're broken.
It means your nervous system adapted to survive something overwhelming.
And healing is possible.

The Body Keeps the Score *(Part 2)*

“... Attend any two-year old’s birthday party and notice how little Kimberly engages with you, plays with you, without any need for language. These early explorations shape the limbic structures devoted to emotions and memory, but these structures can also be significantly modified by later experiences: for better by a close friendship or beautiful first love, or for the worse by a violent assault, relentless bullying, or neglect.” (Pg 57)

SIGNS OF TRAUMA-DRIVEN ADDICTION

1. Using to Numb

Substances are used primarily to suppress intrusive trauma memories, emotional flashbacks, and the constant hypervigilance that trauma creates.

2. Avoidance Behavior

Avoiding trauma reminders by using substances to disconnect emotionally, rather than processing the traumatic experience through therapeutic work.

3. Emotional Dysregulation

Extreme mood swings, explosive reactions, or emotional numbness that substances temporarily stabilize — creating dependency to maintain any emotional equilibrium.

TRAUMA-DRIVEN
ADDICTION
REQUIRES DUAL
TREATMENT



Intersection of
Trauma and
Addiction

*Adaptive coping
strategy...*

Neuroscience of Addiction and Trauma

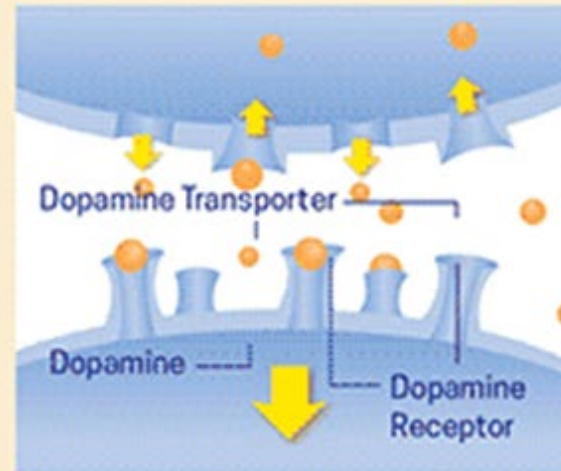
Some drugs target the brain's pleasure center

Brain reward (dopamine pathways)



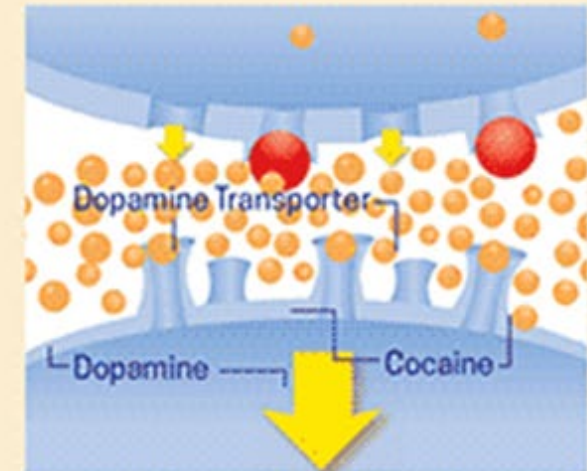
These brain circuits are important for natural rewards such as food, music, and sex.

How drugs can increase dopamine



While eating food

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



While using cocaine

Neuroscience of Addiction and Trauma

Similar impact on the brain:

- Extended Amygdala: Stress-centered emotions like irritability, agitation, anxiety, and elevated fear response often are primary motivating factors for a patient to seek out substances once they start experiencing withdrawal (i.e. Survival Mode)
- Prefrontal Cortex: Matured thought processing like planning and problem solving, along with impulse control, are hijacked when impaired and when engaging in chronic use

Pleasure and Euphoria are sought after above all else. Discomfort becomes intolerable due to seeking out endorphins (our body's "natural opioids")

- The flood of neurotransmitters and pleasure chemicals resulting from use are much stronger and forceful bursts of pleasure than our naturally produced neurotransmitter flood from things like socializing with others, listening to music, or exercise

Addiction stunts your development similarly to trauma (impact on emotional development)

- Prefrontal cortex is one of the last parts of the brain to fully mature, which means impulse control is minimal until then
- Behavior is another form of communicating an unmet need when we don't have the words to communicate

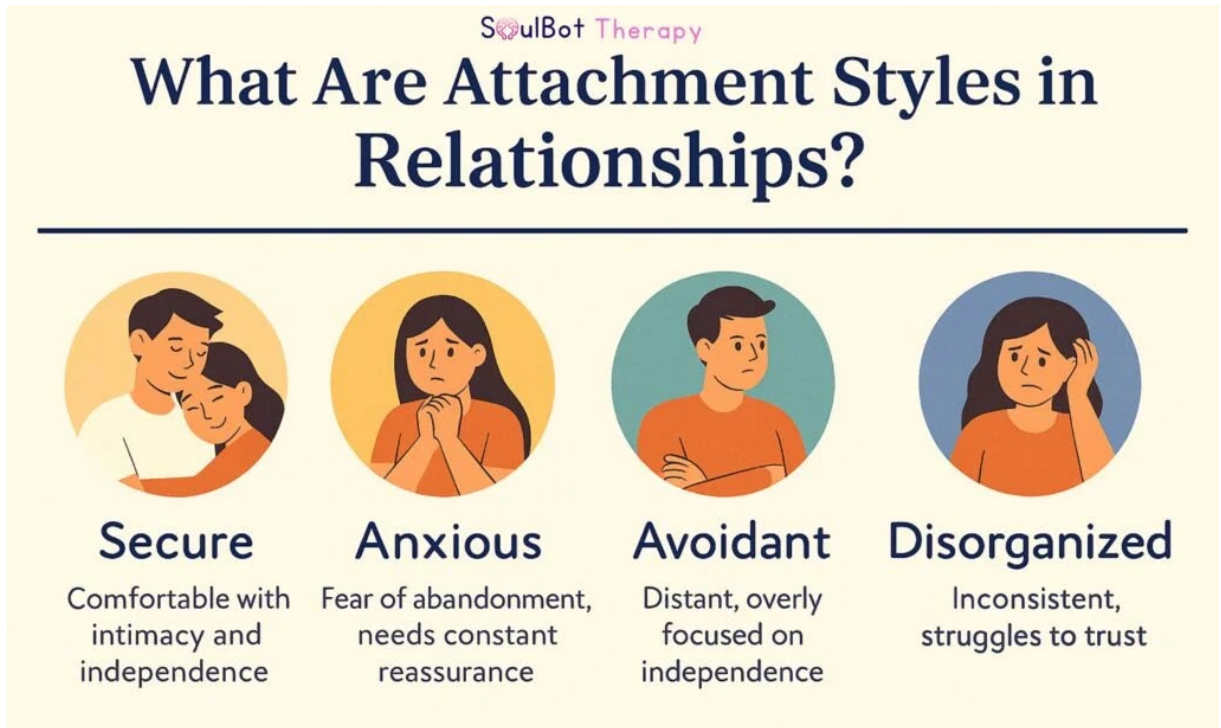
Impact of Trauma on Attachment Style

“Healthiest” (Secure) attachment when they come to us is their “drug”- humanizes the substance

Attachment starts at birth-Understanding a person’s attachment story

Relationships are inherently dysfunctional when someone is in active addiction-repair and relearning healthy, functional relationships is critical in early recovery

There are Unhealthy attachments BEFORE the use started-emotional dependence on substance



In The Realm of Hungry Ghosts

Dr. Gabor Mate

“For all their complexities, emotions exist for a very basic purpose: to initiate and maintain activities necessary for survival. In a nutshell: they modulate two drives that are absolutely essential to human life: **attachment** and **aversion**... These attachment and aversion emotions are evoked by both physical and psychological stimuli. When properly developed, our emotional brain is a reliable guide to life. It facilitates self-protection and simultaneously makes possible love, compassion, and healthy social interaction. When impaired and confused, as it often is in the complex and stressed circumstances prevailing our ‘civilized’ society, the emotional brain leads us to nothing but trouble. Addiction is one of its chief dysfunctions.” (pg 172)

Behavior is another form of communicating an unmet need when we don't have the words to communicate



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graph TD; A[Behavior is another form of communicating an unmet need when we don't have the words to communicate] --> B[Coming out of their numbness emerges these repressed/suppressed emotions...come out in the form of behaviors]; B --> C[Language is developed after behavior is learned...helping them find the words to their pain]; C --> D[How does their behavior highlight their attachment style?]; D --> E[Client story];
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Coming out of their numbness emerges these repressed/suppressed emotions...come out in the form of behaviors

Language is developed after behavior is learned...helping them find the words to their pain

How does their behavior highlight their attachment style?

Client story

What is their behavior telling us?

6 Guiding Principles: *Trauma-informed approach*



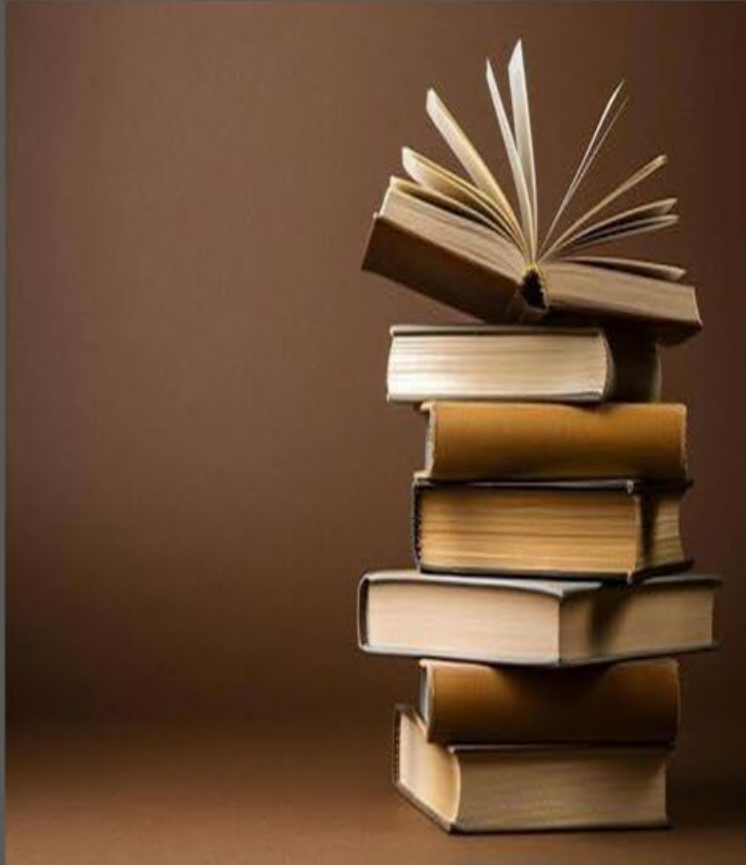
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Questions...





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