

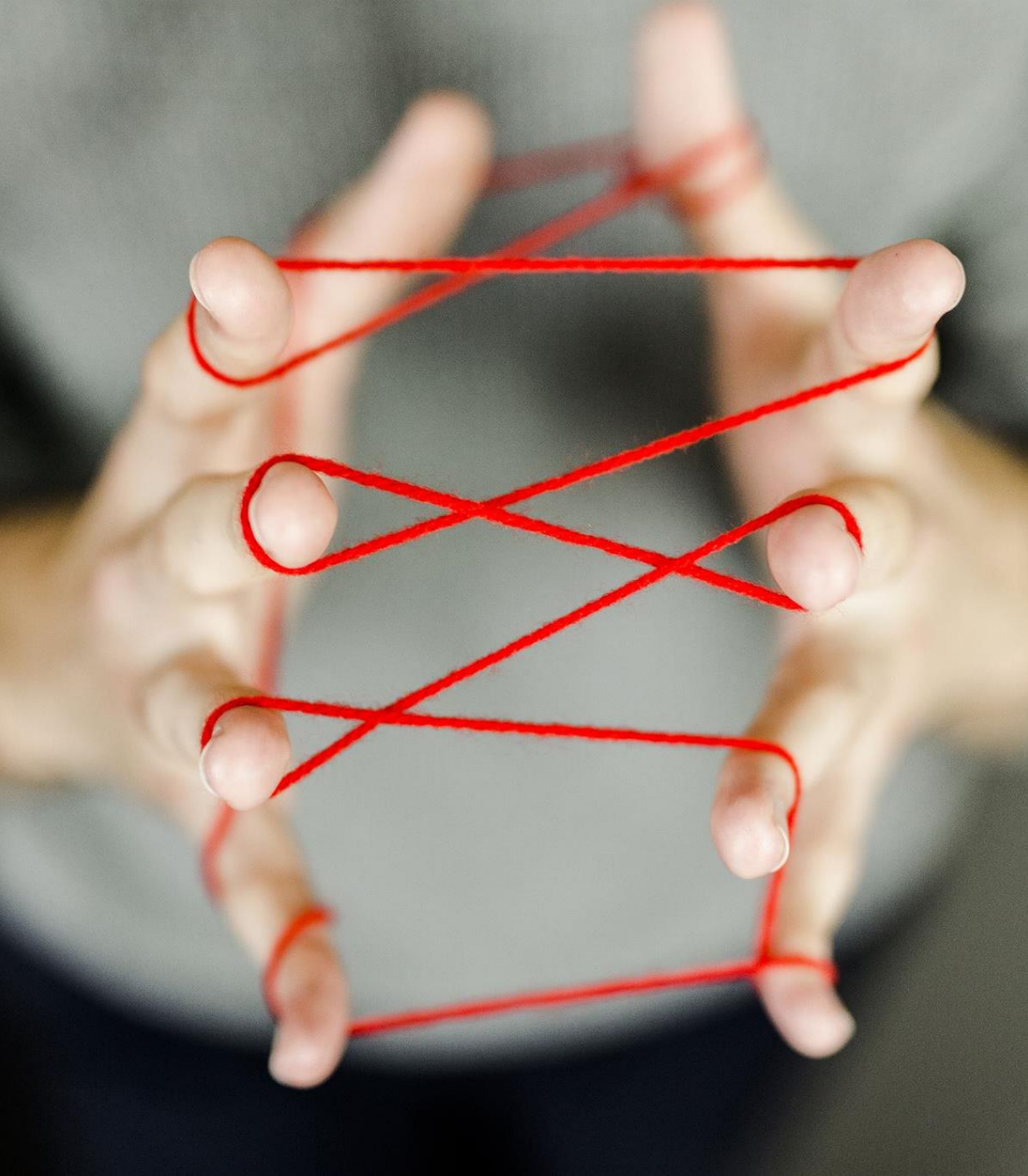
Trauma and Addiction

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RED BIRD
Mental Health



Trauma, Addiction, and Health

[What is Trauma?](#)

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What Is Trauma?



Adverse Childhood Experiences Study (ACEs)

One of the largest studies of childhood abuse and neglect and its effect on household challenges and adult health and well-being

Originally conducted from 1995 to 1997 with over 17,000 participants

ACEs Questions

Abuse

- **Emotional abuse:** A parent, stepparent, or adult living in your home swore at you, insulted you, put you down, or acted in a way that made you afraid that you might be physically hurt.
- **Physical abuse:** A parent, stepparent, or adult living in your home pushed, grabbed, slapped, threw something at you, or hit you so hard that you had marks or were injured.
- **Sexual abuse:** An adult, relative, family friend, or stranger who was at least 5 years older than you ever touched or fondled your body in a sexual way, made you touch his/her body in a sexual way, attempted to have any type of sexual intercourse with you.

ACEs Questions

Neglect (Collected during second wave)

- **Emotional neglect:** Someone in your family never or rarely helped you feel important or special, you never or rarely felt loved, people in your family never or rarely looked out for each other and felt close to each other, or your family was never or rarely a source of strength and support.²
- **Physical neglect:** There was never or rarely someone to take care of you, protect you, or take you to the doctor if you needed it², you didn't have enough to eat, your parents were too drunk or too high to take care of you, or you had to wear dirty clothes.

ACEs Questions

Household Challenges

- **Mother treated violently:** Your mother or stepmother was pushed, grabbed, slapped, had something thrown at her, kicked, bitten, hit with a fist, hit with something hard, repeatedly hit for over at least a few minutes, or ever threatened or hurt by a knife or gun by your father (or stepfather) or mother's boyfriend.
- **Substance abuse in the household:** A household member was a problem drinker or alcoholic or a household member used street drugs.
- **Mental illness in the household:** A household member was depressed or mentally ill or a household member attempted suicide.
- **Parental separation or divorce:** Your parents were ever separated or divorced.
- **Incarcerated household member:** A household member went to prison.

- Note: Research papers that use Wave 1 and/or Wave 2 data may contain slightly different prevalence estimates.

Source: Centers for Disease Control and Prevention, Kaiser Permanente. The ACE Study Survey Data [Unpublished Data]. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2016.

ACE Score Prevalence for CDC-Kaiser ACE Study Participants by Sex, Waves 1 and 2.

Number of Adverse Childhood Experiences (ACE Score)	Women Percent(N = 9,367)	Men Percent (N = 7,970)	Total Percent (N = 17,337)
0	34.5%	38.0%	36.1%
1	24.5%	27.9%	26.0%
2	15.5%	16.4%	15.9%
3	10.3%	8.5%	9.5%
4 or more	15.2%	9.2%	12.5%

ACE Study

1. Adverse Childhood Events are very common
 - Approximately 61% of adults have reported at least one
 - 1 out of every 6 adults have reported more than **4 ACEs**
2. Higher ACEs increases many high risk behaviors
3. ACEs cause numerous health conditions
4. Some children are more at risk for a higher ACE score: women and racial/ethnic minorities are at greater risk
5. It is estimated that ACEs cost hundreds of billions of dollars each year, affecting us on both a micro and macro level

Connecting Mental Health Trauma, and Addiction

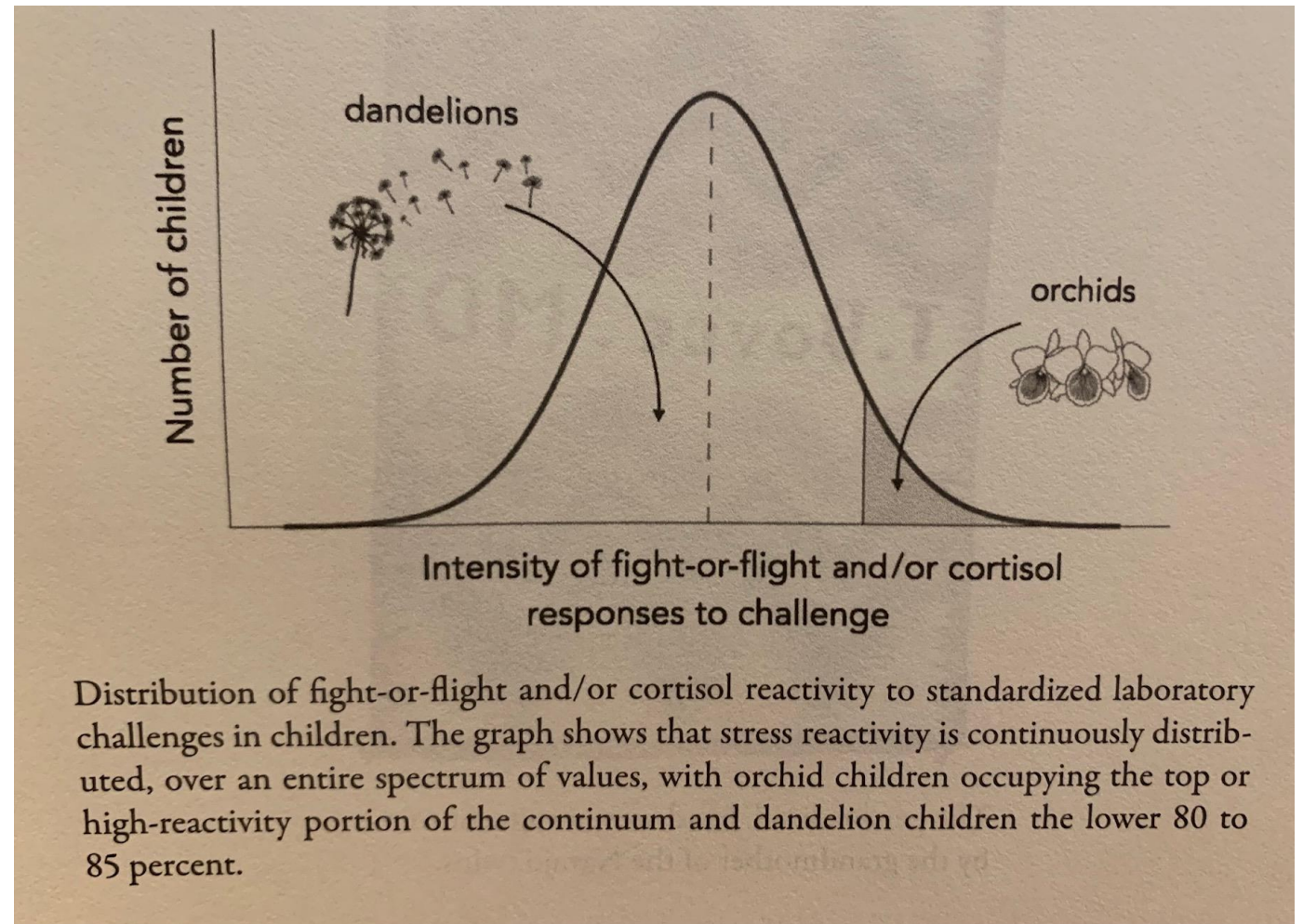
“As the ACE study has shown, child abuse and neglect is the single most **PREVENTABLE** cause of mental illness, the single most common cause of drug and alcohol abuse, and a significant contributor to leading causes of death such as diabetes, heart disease, cancer, stroke, and suicide.”

— Bessel A. van der Kolk, [The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma](#)

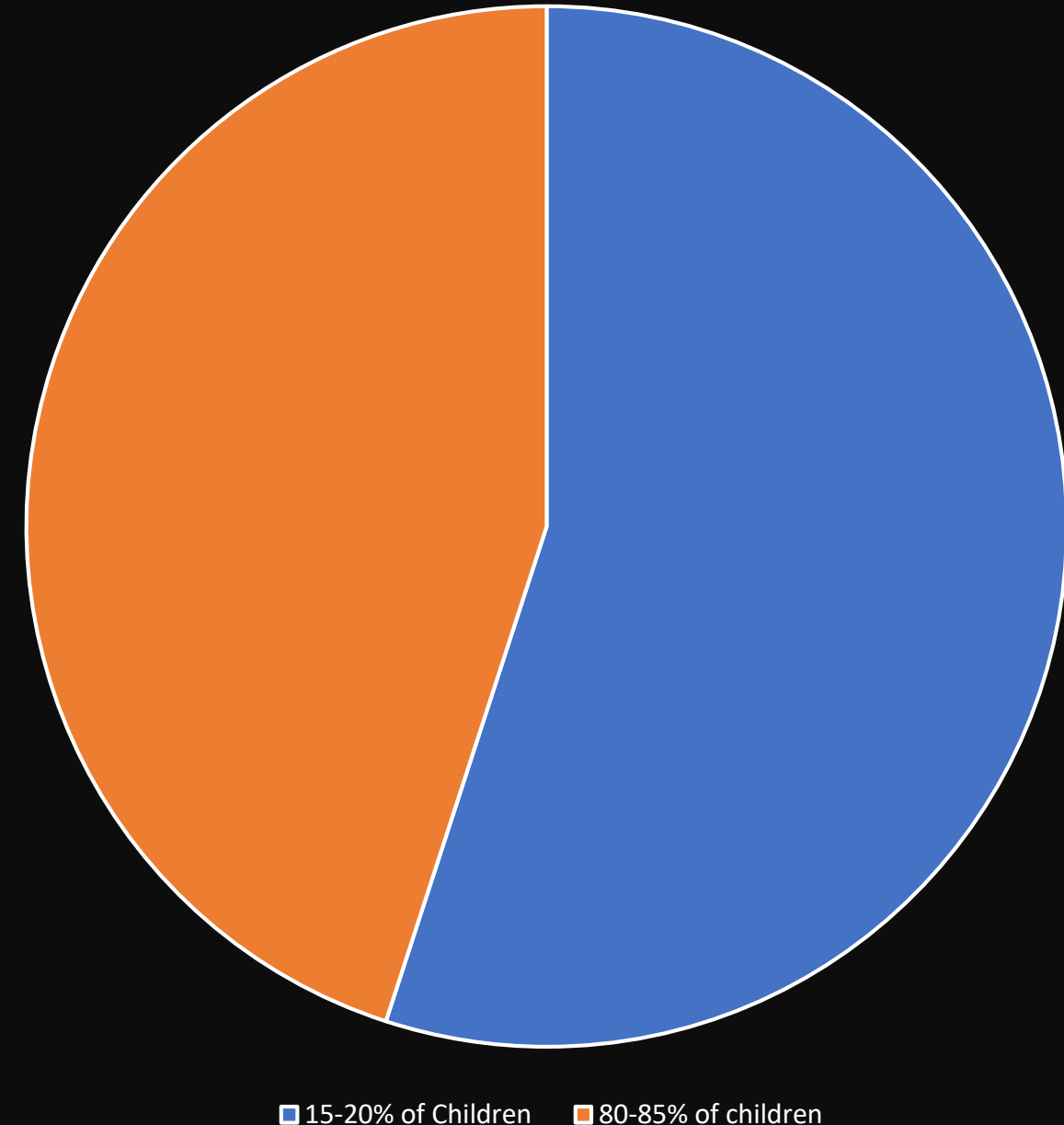
Link between stress and illness

- Early research has shown a *modest, but statistically significant* connection between early childhood adversity and illness, injuries, and disturbances of mental illness
 - Many children can overcome adversity, despite growing up in chaotic, traumatic environments
 - Other children appear to be especially susceptible or vulnerable to childhood adversity

Cortisol Reactivity



Biomedical Diseases, psychiatric disorders and healthcare use

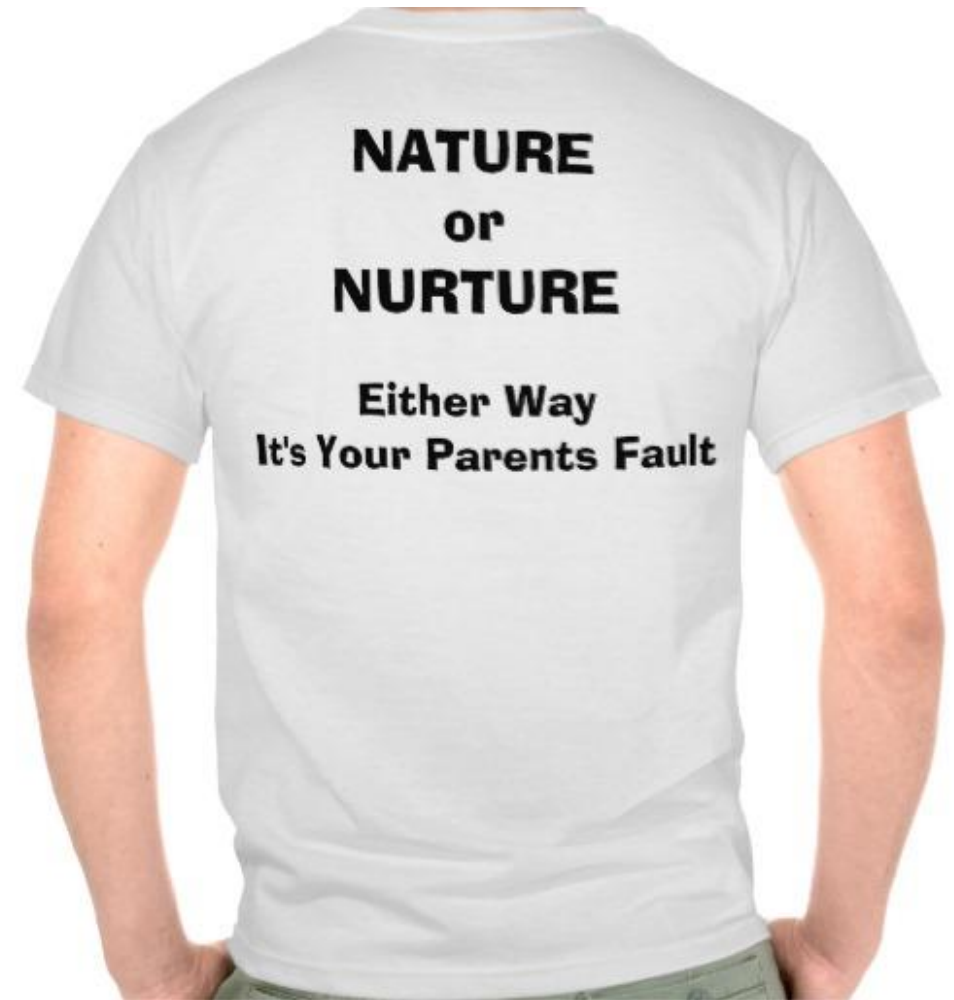


The non-random distribution of illness and misfortune

- 1 out of 5 or 20% of children experience **more than half** of all physical and psychological illnesses
 - The same 1 out of 5 (20%) children are responsible for over half of all healthcare dollars spent
 - The same distribution of illness is found in adult populations
 - The same distribution is found around the globe and in every culture
 - What do you think causes disease inequity?
-

Epigenetics

- Nature/Nurture:
 - Both biology and environment play a pivotal role
 - We are born to connect socially and sculpted by our environment
 - Our earliest social relationships are the most important
 - Brain becomes “hard wired” as time goes on



Epigenetics



It appears that neither nature nor nurture is the sole cause of disease inequity



One theory: The distribution of stress sensitivity

Dandelions: Show a remarkable capacity for thriving in almost every environmental circumstance they encounter

Orchid: exquisitely sensitive to their environment, making them especially vulnerable under conditions of adversity, but also highly creative, vital, and successful within supportive, nurturing environments



Post-Traumatic Stress Disorder

- Diagnosis from the DSM
 - People need to go through a heinous trauma
 - The word trauma is related to events and not necessarily the nervous system
- Peter Levine: Trauma is in the nervous system, not in the event

What is trauma?



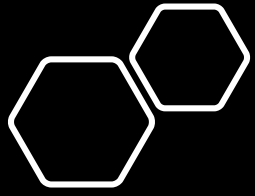
During the exercise, pay attention to:

- Emotions
- Physical Sensations
- Thoughts or Cognitions
- Images
- Impulses
- Memories

What is Trauma?

- Oklahoma City Bombing, 4/19/1995
-





What is Trauma?

- World Trade Center, NYC
9/11/2001



What is Trauma?

- Wildfires in Oregon 2020, 2021





What is Trauma?

- Collapsed Condo in Miami Florida
6/24/2021

What is Trauma?

- OMRAN DAQNEESH BOMBING IN ALEPPO, SYRIA 8/17/2016



What is trauma

- What did you notice during the exercise:
 - Emotions
 - Physical Sensations
 - Thoughts or Cognitions
 - Images
 - Impulses
 - Memories

Treating Trauma:
*2 Ways to Help
Clients Feel Safe,*
with Peter Levine



Post Traumatic Stress Disorder:

Disorder of Nervous System Dysregulation:

- Extreme events:
 - Hurricanes, tornados, tsunami, car accidents, traumatic death
- Accumulated events:
 - chronic stress that is accumulated over time
- Intergenerational trauma:
 - children of holocaust survivors are much more likely to have an altered stress profile than other survivors
- Social or Historical Trauma:
 - if my body is marginalized, stigmatized by the culture I am in, it can dysregulate the system;
 - disability, racism, homophobia etc.
- Developmental Trauma:
 - family violence, abuse, neglect during childhood

Bessel van der Kolk:

“If you are using CBT to treat trauma, you are treating the wrong part of the brain”



Regulation

- **BEHAVIORAL FLEXIBILITY**

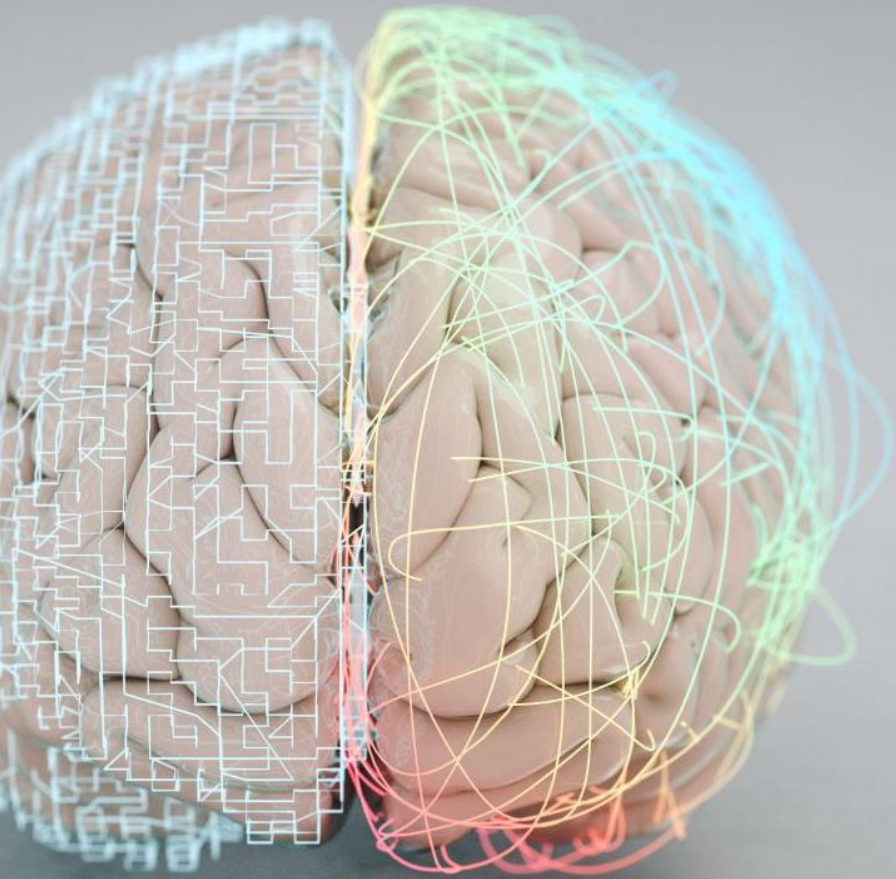
(definition of wellness)

- The nervous system can go into a state where it can optimally respond;
- The body is in the correct state of arousal
- *Calm is **not** a synonym for regulation, calm is only one option, but not always optimal



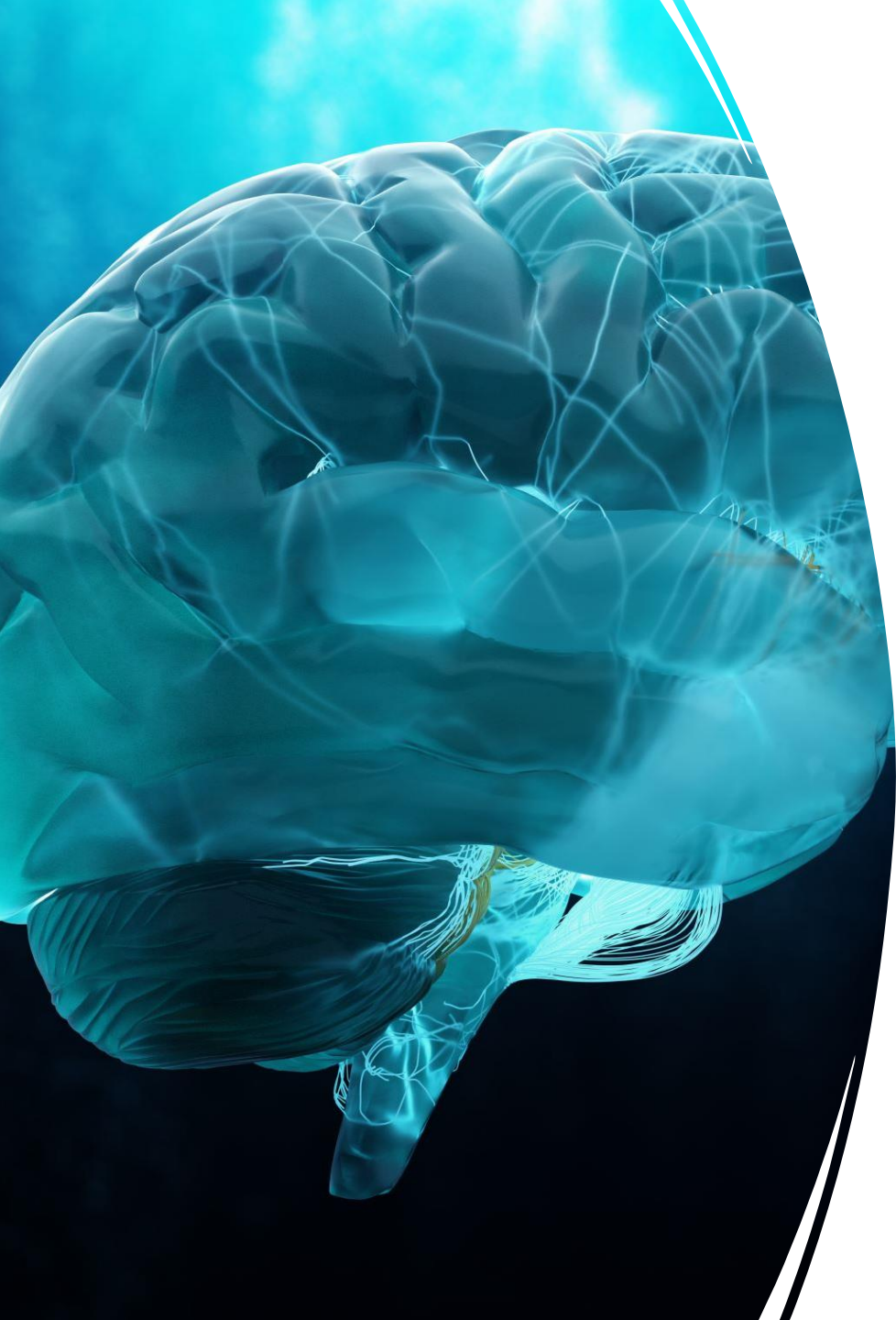


What is Pendulation



Nervous System

- Top-Down Regulation (Brain to Body)
 - Try to alter thinking states to regulate our body
 - Top-Down Regulation is helpful and often the primary focus in most psychotherapies

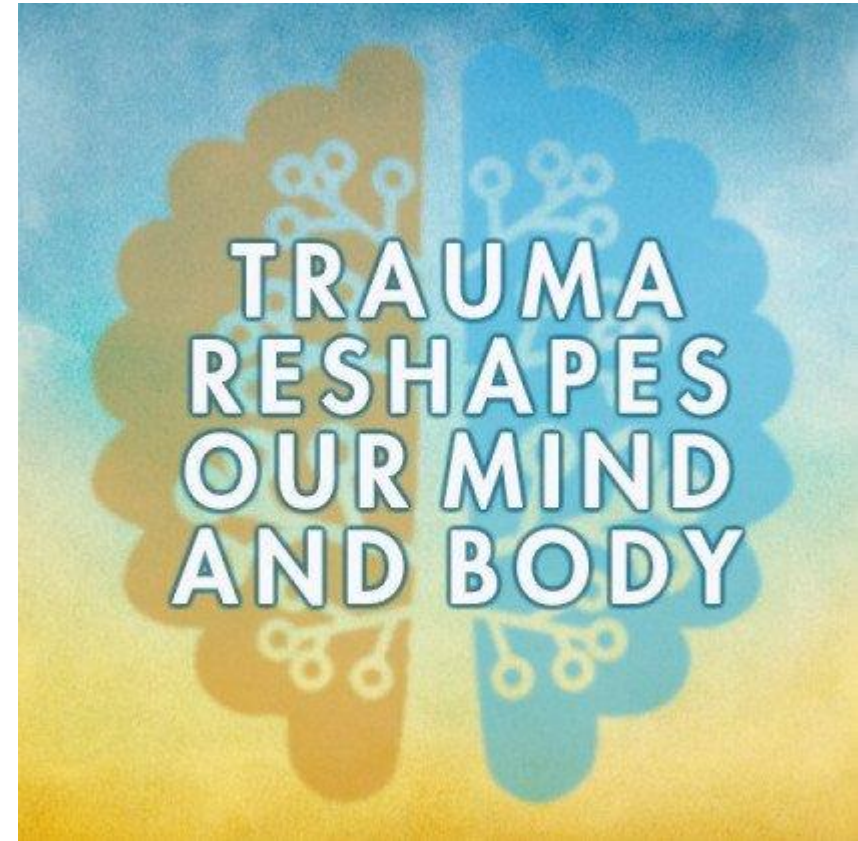


Nervous System

- Bottom-Up Regulation (Body to Brain)
- By using this method, the body can start to regulate itself

Symptoms are Based on the System

1. **Physiological:** The ways our BODY REACT based on the trauma
2. **Cognitive:** The ways we THINK based on the trauma
3. **Behavioral:** The ways we ACT based on the trauma
4. **Affective:** The ways we FEEL based on the trauma





Symptoms are Based on the System

Physiological : The ways our BODY REACTS based on the trauma

Freeze: Happens when our life is threatened, and we cannot escape

Symptoms

1. Slow, barely perceptible breath
2. Decreased heart rate
3. Energy conservation
4. Muscles are limp, flaccid
5. Dizziness, Fainting
6. Shock
7. Anesthesia
8. Body Aches and Pains

We are Wired to Manage Trauma

1. Reptilian Brain comes online when we are threatened (Pre-Cognitive)
 1. Fight: Fight against the predator (Autonomic Nervous System)
 2. Flight: Run away from the predator (Autonomic Nervous System)
 3. Freeze: Make ourselves appear dead to keep away predators (Sympathetic Nervous System)



Fight



Flight



Freeze



What is Polyvagal Theory?

- Stephen Porges: The understanding of how our body reacts to stress
- Reactions are based on evolution of **Autonomic Nervous System**
- As it evolved, it evolved in a *hierarchy* of circuits
 - Older Circuits: Reptilian (Fight/Flight/Freeze)
 - Newer circuits: Social Interaction (Mammalian nerves, which connect brain stem to nerves in the face and head)
 - Vocalization
 - Listening
 - Expressivity, gesture
 - Linked to the nerves regulating the heart

Baboons Save Impala From Leopard and Hyena





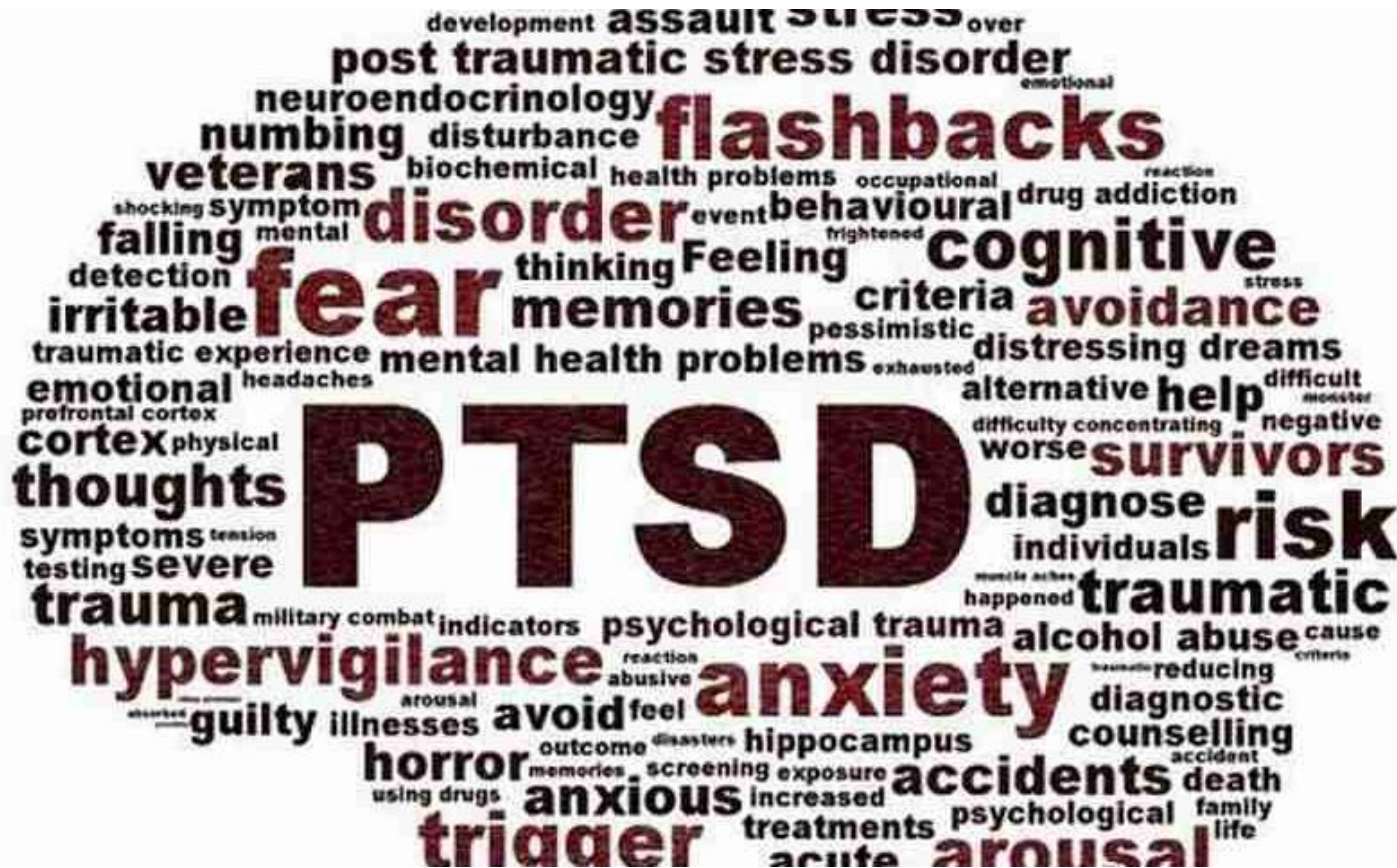
Trauma Discharge: The ways our BODY REACTS based on the trauma

ACTIVATION: Fight and Flight Physical Symptoms

- Shallow, quick breath high up in the chest
"I can't catch my breath"
- Increased Heart Rate
"My heart was in my throat"
- Digestion Decreases
"Butterflies in my stomach"
- Become Mobilized to Move
"I felt like jumping out of my skin"
- Increased sweating
"Sweating Bullets"
- Body aches and pain, muscle tension:
"Weight of the world on my shoulders"
- Piloerection:
"Hair on the back of my neck stood up"
- Pupil Dilation:
"Look your fear in the eye"
- Shaking, Trembling
"Shaking like a leaf"
- Difficulty Speaking
"Cat got my tongue"



Symptoms are Based on the System



Cognitive: The ways we THINK based on the trauma

1. Difficulty Concentrating
2. Hypervigilance
3. Flashbacks
4. Nightmares

Symptoms are Based on the System



Cognitive: The ways we THINK based on the trauma

1. Freeze Based Cognitive Distortions:
 1. “I should have stopped him from drinking, and he wouldn’t have hurt me.”
 2. “If it was really abuse, I would have told.”
 3. “I didn’t say no, so I must be okay with what happened.”

Cognitive: The ways we THINK based on the trauma

1. Just World Theory: Good things happen to good people, bad things to bad people

1. "I am a bad person."
2. "I deserved to be hurt."
3. "There must be something wrong with me, that is why they hurt me"
4. "If I was better, my mom wouldn't have hit me."



Symptoms are Based on the System: Behavior

1. Fight: Resistance of the Trauma
 - Disclosing trauma, protesting, being called to action
 - Violence, fighting, bullying, trolling
2. Flight: Avoidance of the trauma
 - Escaping, Running Away
 - Self-Injury, Suicide, Substance Abuse
3. Freeze: Dissociate from Trauma
 - Playing Dead
 - Shut Down, Collapsed



Orientation:

- Definition: connecting to the environment through the senses; recognize that the nervous system we have evolved in context
 - We evolved to be both predator and prey
 - Relaxed alertness: The need to be orientated to where we are



Other Symptoms: Relational

- 1. Distrust**
- 2. Irritability**
- 3. Increased Conflicts**
- 4. Withdrawal from Others**
- 5. Feeling rejected/abandoned**
- 6. Being Judgmental**
- 7. Overly Controlling**

Bystander Responses To Trauma



- Denial
- Victim Blaming
- Numbness
Depersonalization
- Dissociation
- Objectifying
- Exhaustion
- Overwhelm
- Anxiety
- Depression
- Somatization



What does
addiction do
for us?



What is
Addiction?

Symptoms of Addiction

- Loss of control
- Persistent Drug use despite negative consequences
- Relapse- most common people have several relapses
- Craving
- Impaired decision making and loss of insight



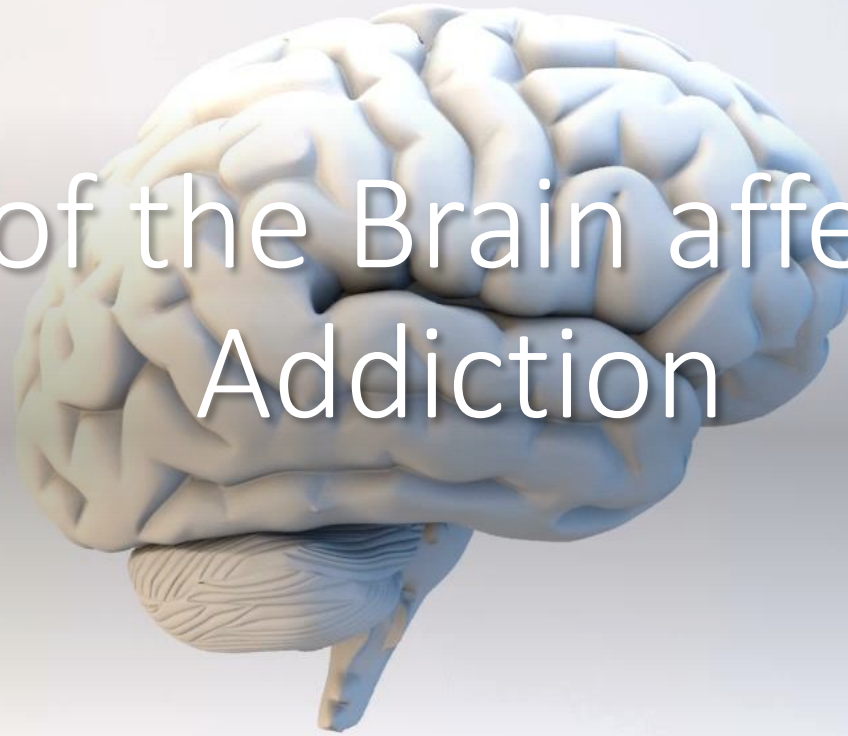
Pathways to Addiction

- Mental Illness: Depression, Anxiety
- Chronic Pain and use of prescribed medication
- Genetics/Epigenetics leading to Reward Deficiency Syndrome
- ADHD
- Early Use/Peer Use/Parental Use
- Adverse Childhood Experiences
- PTSD/Trauma
- Cortical Dysfunction: Tumors, TBI/CTE, Glial Pathology, ADHD, Neurodegenerative Disorder

What
increases
risk of
addiction?

- Biological Factors account for 40-60%
- Environmental Factors
 - Home and Family use of addictive substances or behaviors
 - Friends and peer use
 - Difficulties in School or poor social skills
- Other Factors
 - Early Use leads to a greater risk of addiction
 - How early someone starts to use-smoking or injection increases risk of addiction

Areas of the Brain affected by Addiction



Brain Circuits Involved in Drug Abuse and Addiction

Inhibition
and Control

Reward/Saliience

Inhibition Control

- Prefrontal Cortex
- Anterior Cingulate Gyrus

Reward/Saliience

- Nucleus Accumbens
- Ventral Pallidum

Motivation/Drive

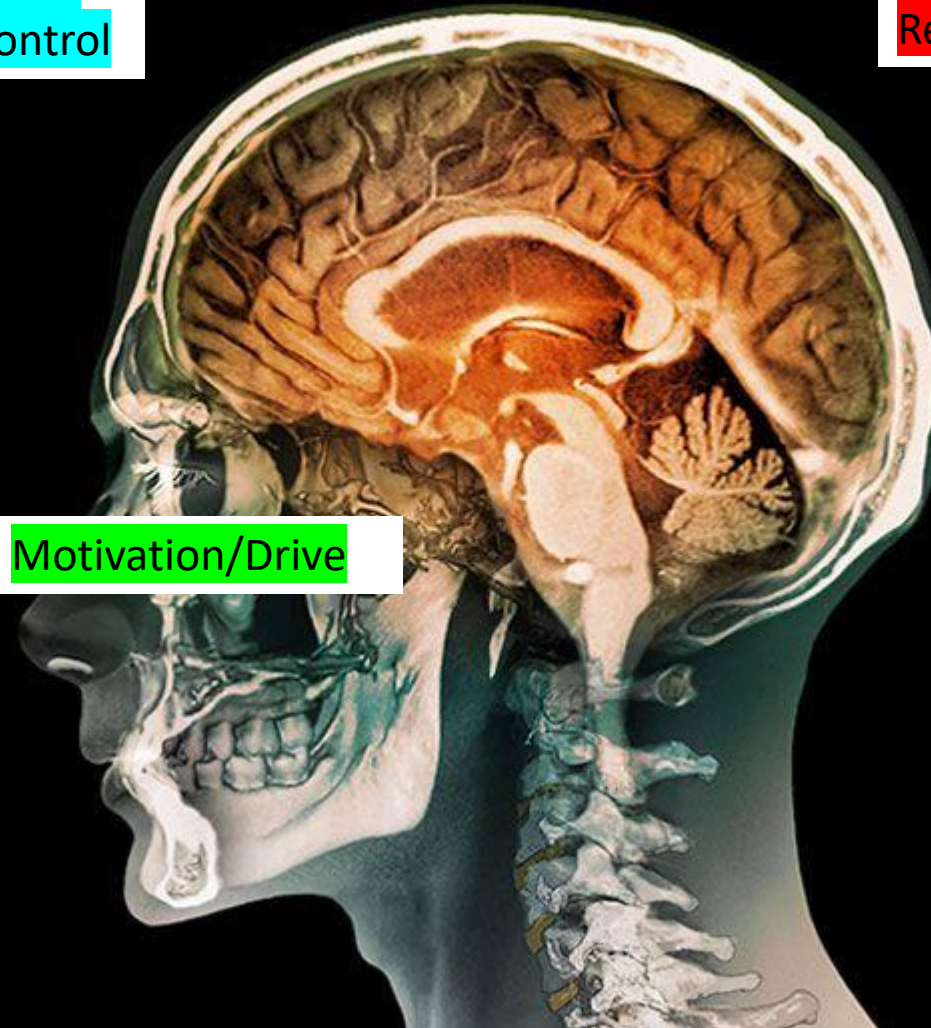
- Orbitofrontol Cortex
- Subcallosal Cortex

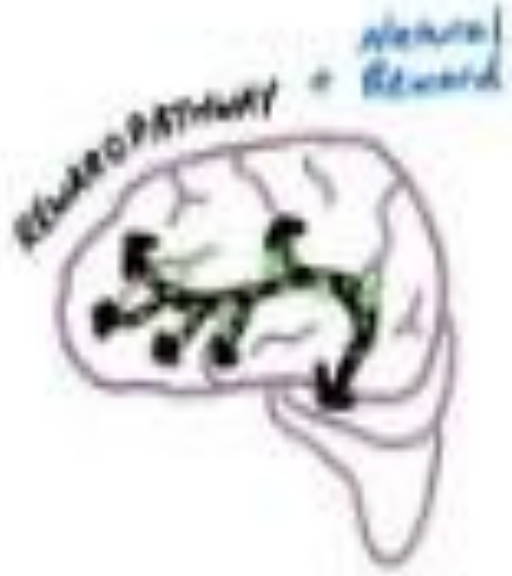
Memory and Learning

- Amygdala
- Hippocampus

Motivation/Drive

Memory and
Learning







Chocolate Chip Cookies

- Addiction is a disorder of the pleasure center of the brain and connects three major centers:
 - Reward/Salience (Dopamine)
 - Reward/Learning and Cortical Control (Glutamate)
 - Consummatory “Pleasure”- calm our brain down
 - Endogenous Opioids
 - Endogenous Cannabinoids
 - GABA
 - Serotonin
 - Oxytocin

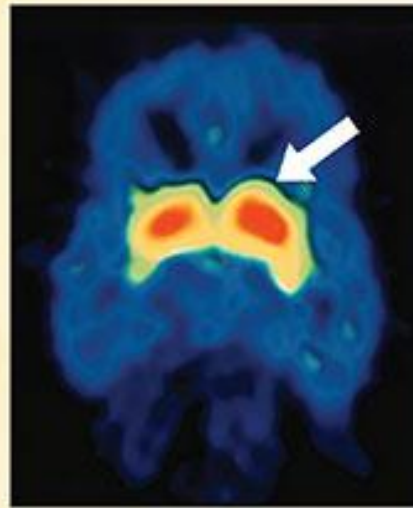
What makes an experience pleasurable?

- The pleasure system predates human existence
- We attach survival with pleasure
- Hedonic Weight: Cookies vs. Broccoli
- For an addicted individual, the drink is life itself

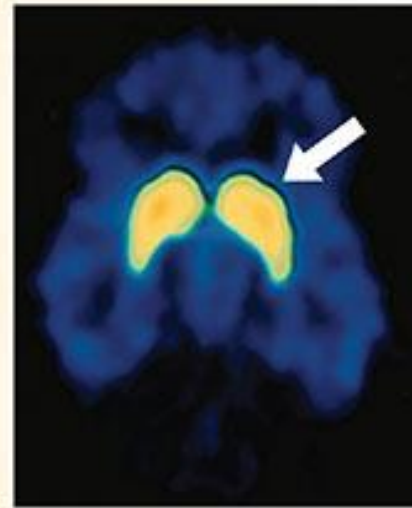


Dopamine Reward System

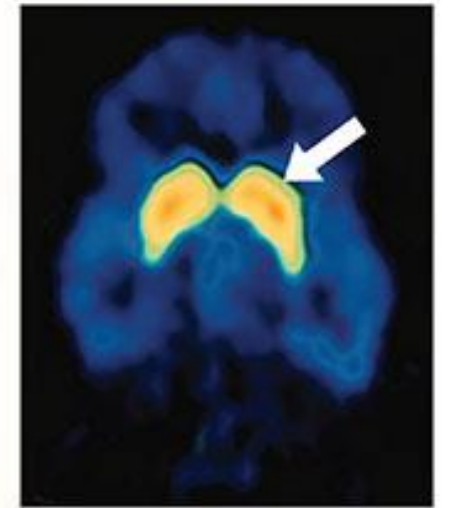
Comparison Subject



1 Month After Cocaine Use



4 Months After Cocaine Use



Low dopamine D2 receptors may contribute to the loss of control in cocaine users.

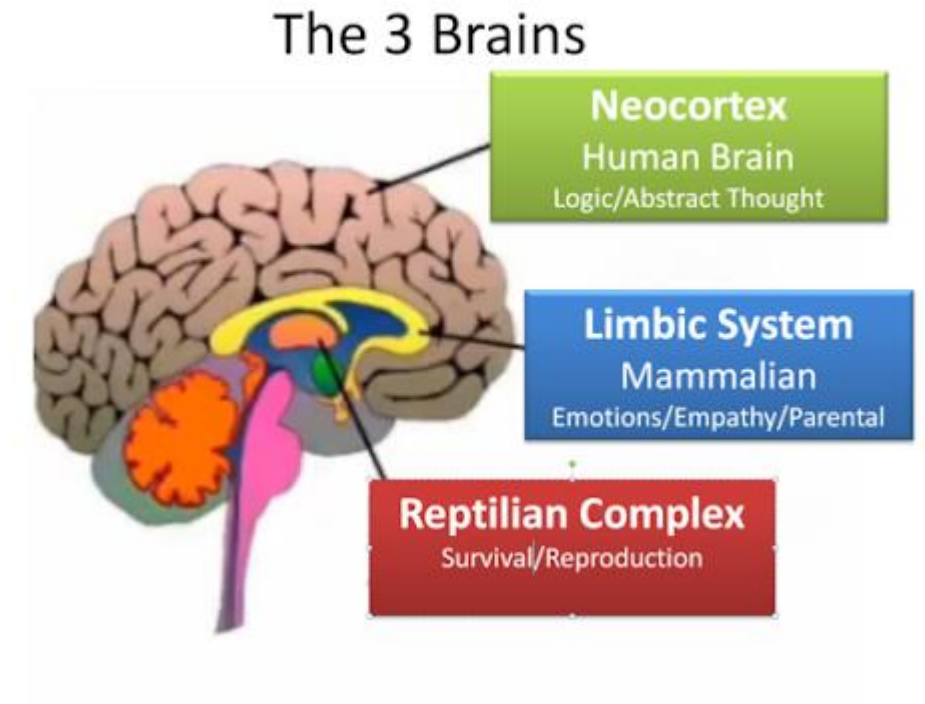
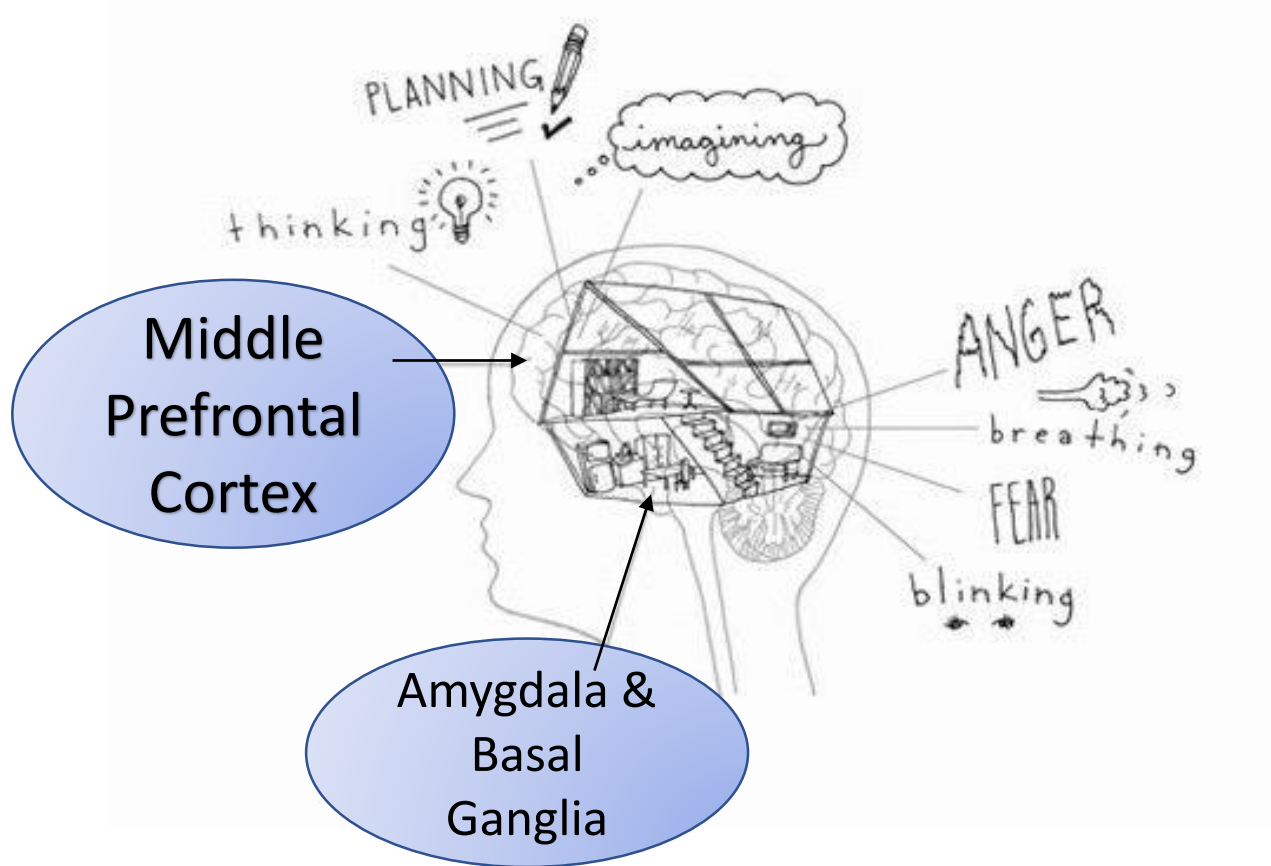
Reward Learning System

- **Reward/Saliience**
 - Nucleus Accumbens
 - Ventral Pallidum
- VALUATION: The reward and survival value of a given drug or behavior is out of proportion to the real survival value
- DRUG HYPER Memories
 - Any sort of exposure to people, places, things, time of day, sensations, can cue a relapse prior to conscious awareness



Trauma and Addiction

Stress, Trauma and the Brain



Childhood trauma and addiction

Trauma makes every stage of addiction worse:

Earlier Initiation

Regular use

Abuse/dependence

Decreases motivation to quit

Increases relapse

The relationship between ACEs and SUD

Increase risk of developing a substance use disorder

Earlier initiation of alcohol use

Increased risk of tobacco use

For every additional ACE score, there is a 62% increase in the number of prescription drugs used

Each additional ACE score increase the risk of illicit drug use and earlier use



What is Resilience and Recovery?



What is Recovery?

- *A Family Being Deported Under Armed Guard While Farmers Threaten Them* by Malvina Lowova, died aged 12 in Concentration Camp





What is Recovery?

E.T

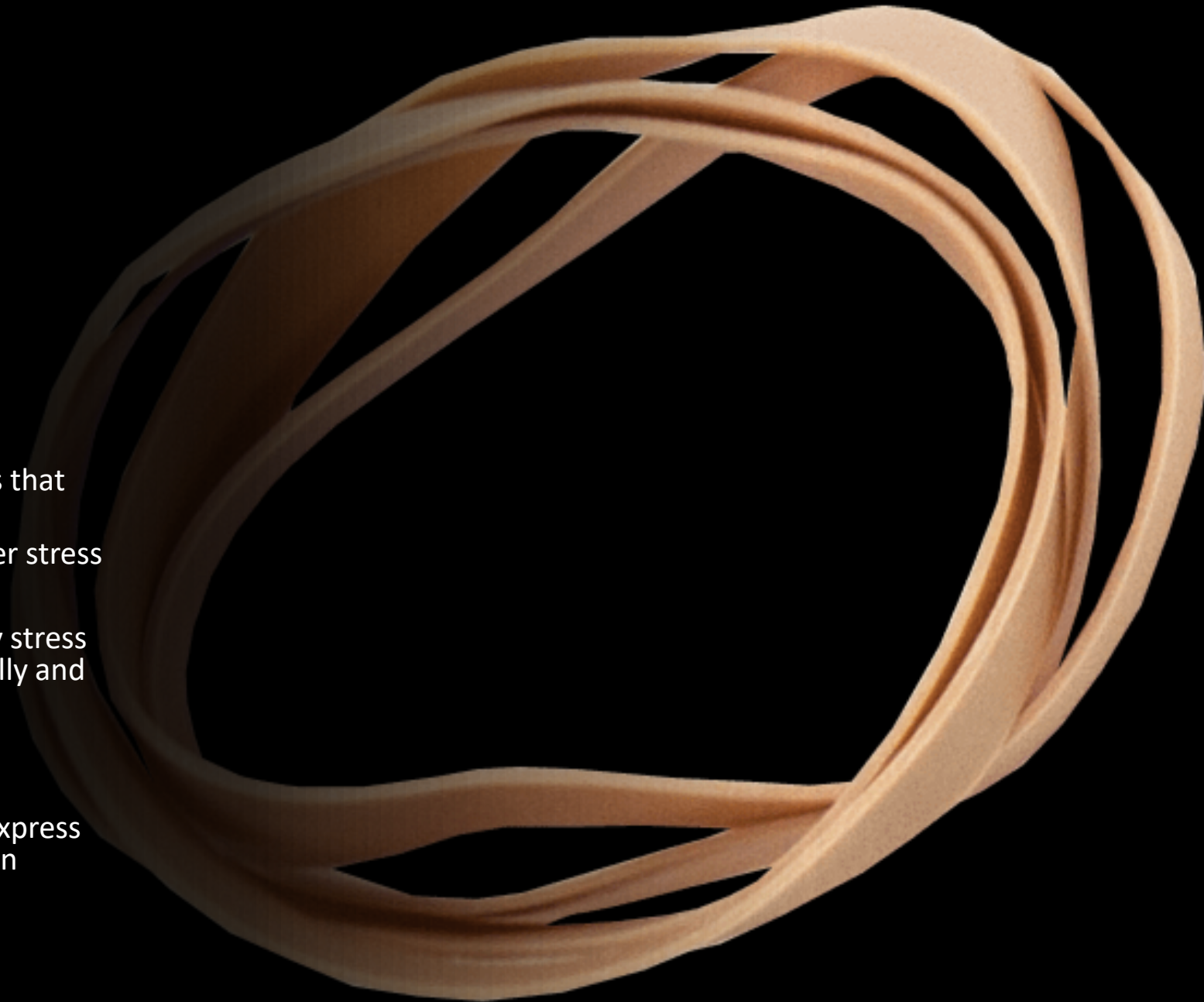
How to Heal from Trauma





Resilience:

- Definition:
 - My ability to bounce back from things that are challenging
 - The capacity to return to baseline after stress
- In physiology:
 - Stress is an alteration in body, healthy stress occurs when we activate physiologically and then de-activate
 - Role of Epigenetics
- Goal of treatment:
 - People can show up to their lives to express the whole range of emotions, situation specific, and adaptive



How does
understanding
stress get me
sober?

Peer based coping:
Anonymous groups
(AA/NA/OA/GA
etc.)

Contingency
Management

Stress
management

Safe housing

Trauma informed
therapy

Immune System
Support

Addiction informed
medications

Building a social
network geared to
recovery

Somatic Recovery

How our bodies naturally recover from trauma through movement and touch

- Small, self regulatory movements release serotonin in the body
 - “Nail biter” “Take a load off”
 - “Tearing my hair out”
- Complete the movement that we were unable to do after the trauma happened

shoulder & neck tension relief (sitting) track 4



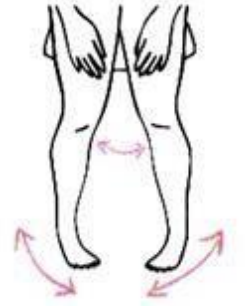
Hold center of breastbone



Knead your neck muscles



Stretch legs



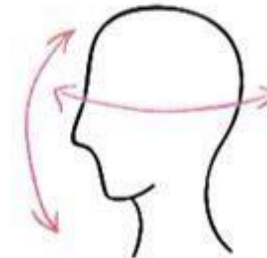
Windshield wipers—rapidly swivel feet and legs in and out



Shoulder shrugs—inhale as shoulder lift to ears



Inhale with elbows out, exhale as elbows come in



Head rotation or bob up and down



Meditate on breathing deeply—spine straight

Empirically Supported Therapy for Trauma and Addiction:

- Trauma:
 - Trauma Focused CBT
 - Somatic Experiencing
 - Eye Movement Desensitization and Reprocessing (EMDR)
 - Cognitive Processing Therapy (CPT)
 - Exposure Therapy
- Trauma and Addiction:
 - Seeking Safety
 - Alcoholics Anonymous
 - Mindfulness-based treatment for addiction
- [6 Ways to Heal Trauma Without Medication](#)

Resources:

Websites:

- <https://www.ncbi.nlm.nih.gov/books/NBK207191/>
- <https://www.cdc.gov/violenceprevention/aces/index.html>
- <https://www.tfcbt.org/resources/>
- [https://www.ajpmonline.org/article/S0749-3797\(98\)00017-8/fulltext](https://www.ajpmonline.org/article/S0749-3797(98)00017-8/fulltext)
- <https://traumahealing.org/>

Books:

- The Body Keeps the Score by Bessel van der Kolk
- Waking the Tiger by Peter Levine
- Treating Complex Traumatic Stress Disorder Edited by Christine Courtois and Julian D. Ford
- When the Body Says NO: The Cost of Hidden Stress by Gabor Maté
- The Orchid and the Dandelion by W. Thomas Boyce
- The Developing Mind by Daniel Siegel
- The Mindfulness and Acceptance Workbook for Anxiety by Georg H. Eifert and John P. Forsyth



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