

Trauma Informed Practice

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Goals of Presentation

- Define trauma and a trauma-informed system
- Understand how our biology forms our behavior after experiencing trauma
- Learn how attachment styles may cause toxic stress

The Heart of Trauma Theory

- Dr. Bloom states we all need to change the fundamental question from:

“What is wrong with you”

to

“What happened to you?”



Addiction and Mental Health Trauma Policy

Policy

It is the policy of the Addictions and Mental Health Services (AMH) of the Oregon Department of Human Services that all state and community providers, and those who oversee public mental health and addiction services are informed about the effects of psychological trauma, assess for the presence of symptoms and problems related to that trauma, and develop and offer services that facilitate recovery in accordance with Oregon Administrative Rules <http://www.oregon.gov/DHS/addiction/trauma.shtml>

A Trauma Informed System

- Respect
- Connections
- Empowerment
- Information
- Hope

What Needs to Change to Understand Trauma?

Understanding trauma is not just about acquiring knowledge.



It is about changing the way you view the world (Bloom, 1997)



Tools that Can Help Change the World!

A group of researchers at the National Institute on Drug Abuse (NIDA) predicts major scientific breakthroughs on research on neurobiology will change the way we see an individual.

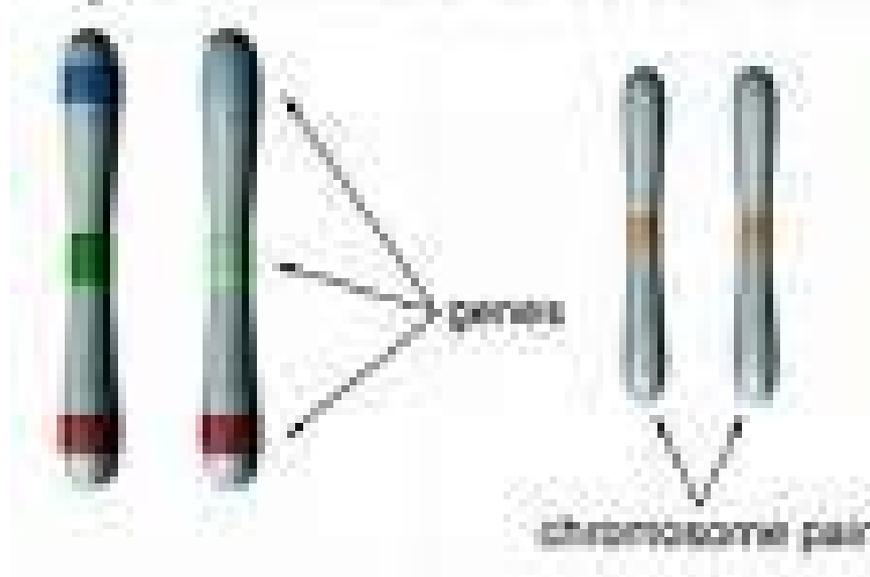
In order to understand those changes a short tutorial on neurobiology is helpful!

Neurobiology, Why We Need to Discuss It!

- To understand how the brain develops under stress,
- To resolve myths about behavior,
- To develop the knowledge that can shift our current paradigm,

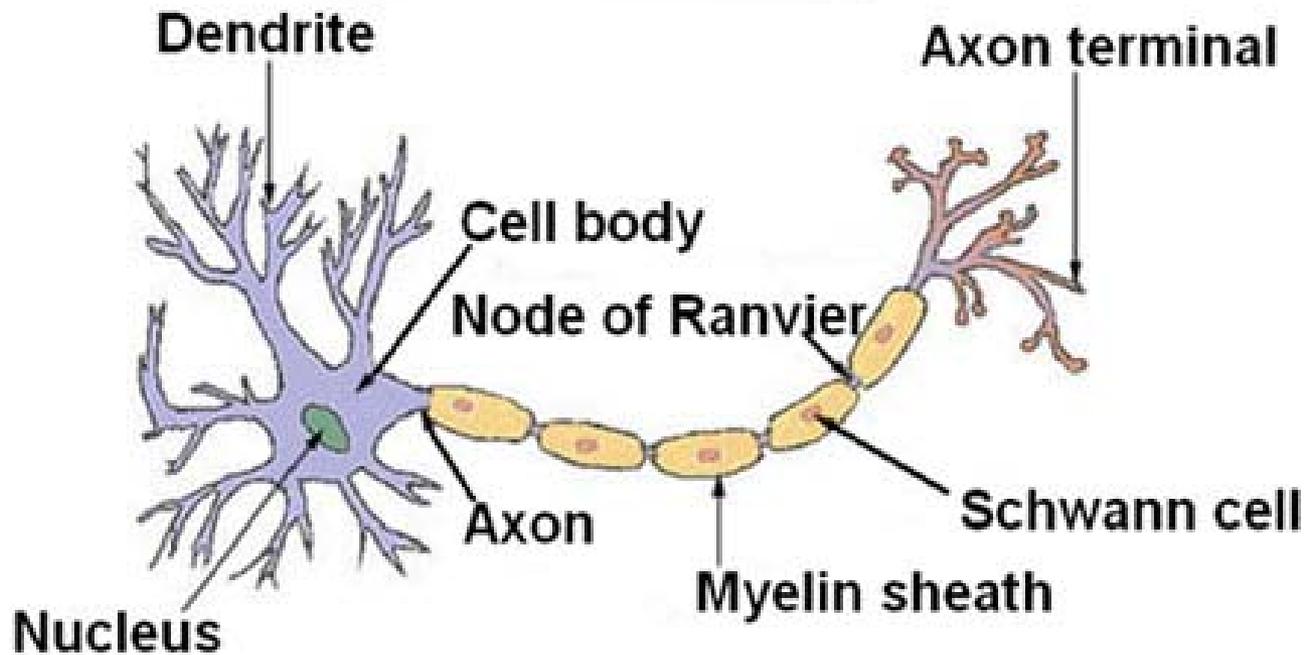
Genes

Figure C-1: Location of Genes in DNA.



Neurons

Structure of a Typical Neuron

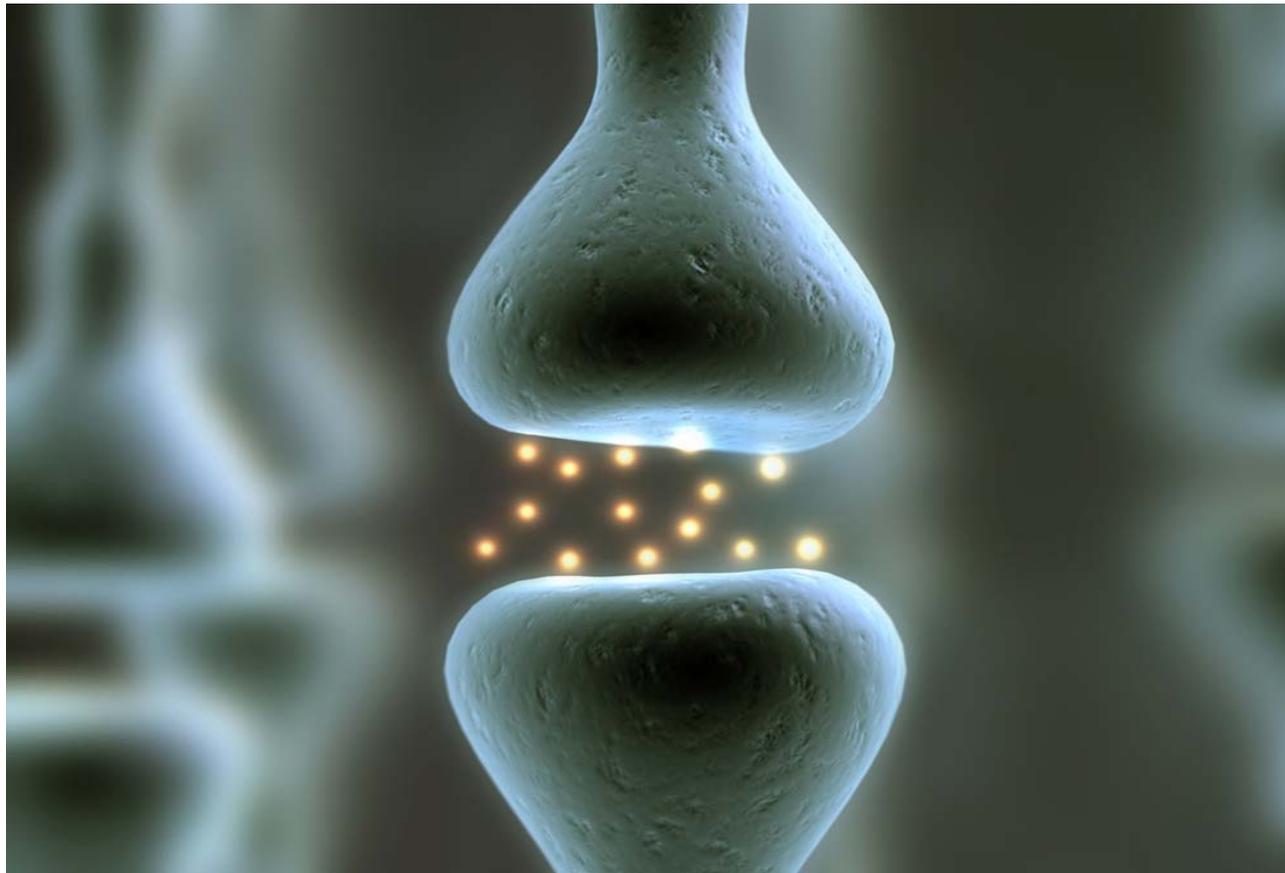


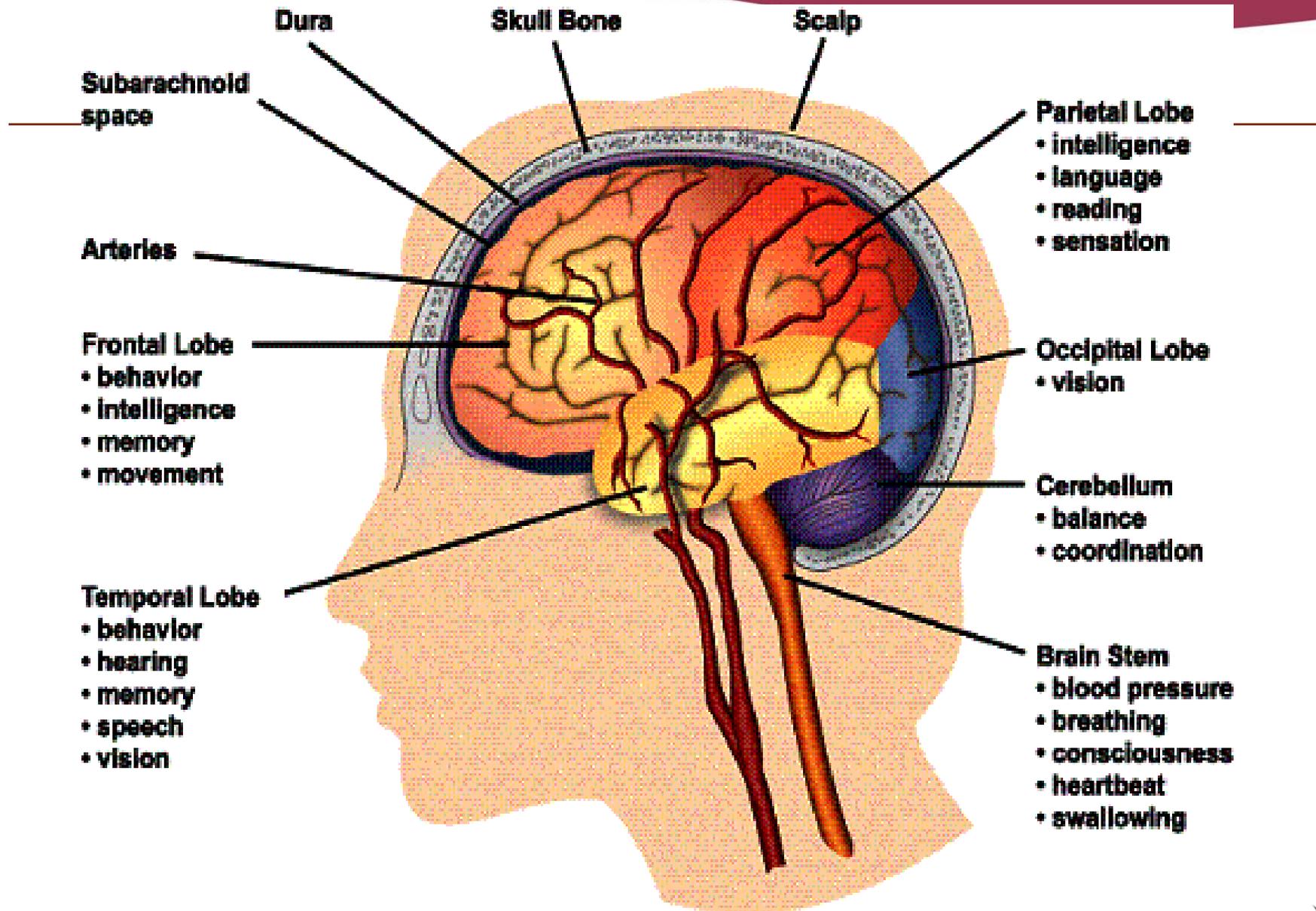
What Makes a Neuron Work?

- Electrical impulse
- Neurotransmitters



Neurotransmitter and Electrical Impulse





Role that Certain Neurotransmitters Plays in the Brain

Type of Neurotransmitter

Norepinephrine

Serotonin

Dopamine

Opioids

Oxytocin

Role in Brain

arousal, excitement

behavior initiation, mood enhancer

reward, reinforcement, motivation

pleasure, painkillers

feelings of love

Role of Neurons and Neuronal Circuits/Networks

- Neurons make up neuronal circuits
- There are many types of neuronal circuits such as:
 - attachment-reward circuits (opioid)
 - incentive-motivation circuits (dopamine)
 - self-regulation circuits (serotonin)

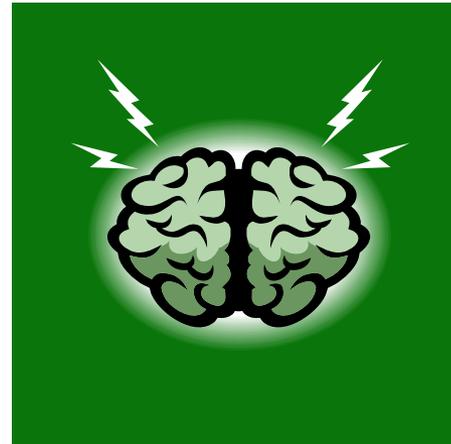
(Mate, 2007)



Reward Circuit/Limbic Circuits (Go Circuits!)

Reward circuit includes

- Nucleus accumbens
- Amygdala
- Hippocampus
- Ventral tegmental area
- Insula
- Cingulate gyrus



Function of Go Circuits (Limbic Region)

- Emotions
- Motivation
- Learning
- Emotional memory



Executive Circuit/Prefrontal Circuits (Stop Circuit)

- Prefrontal cortex including the orbitofrontal, medial and ventral prefrontal cortex
- Anterior cingulate
- Dorsolateral prefrontal region



Function of Stop Circuit

- Impulse control
- Judgment
- Language
- Working memory
- Motor functions
- Sexual behavior
- Problem solving

Self-monitoring
Self-awareness
Mental flexibility
Speaking
Personality
Intuition
Initiation

Mirror Neurons

- Mirror neurons circuitry fire in the brain when it sees another person doing an activity.
- Scientist believe mirror neuron circuitry are used to learn and develop behavior.
- Research is continuing to find other uses for mirror neurons such as developing empathy (theory of mind).

Healthy Outcomes of Go, Stop and Mirror Circuits

- Body regulation
- Attuned communication
- Emotional balance
- Response flexibility
- Empathy
- Insight or self-knowing awareness
- Fear modulation
- Initiation
- Morality



(Siegel, 1999)

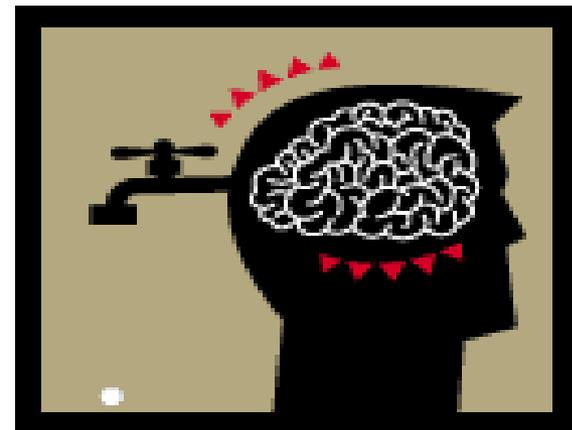
Brain Anatomy and Physiology

Studies are able to pinpoint areas of the brain that regulate cognition and behavior. For example:

–Poor regulation of behavior and propensity to negative affect are caused by neuronal circuits including the

- Stop circuits
 - Anterior cingulate
 - Prefrontal and insular cortices
- Go Circuits
 - Amygdala
 - Ventral striatum

(Helzeg, et al, March, 2008)



Brain Behavior Relationships

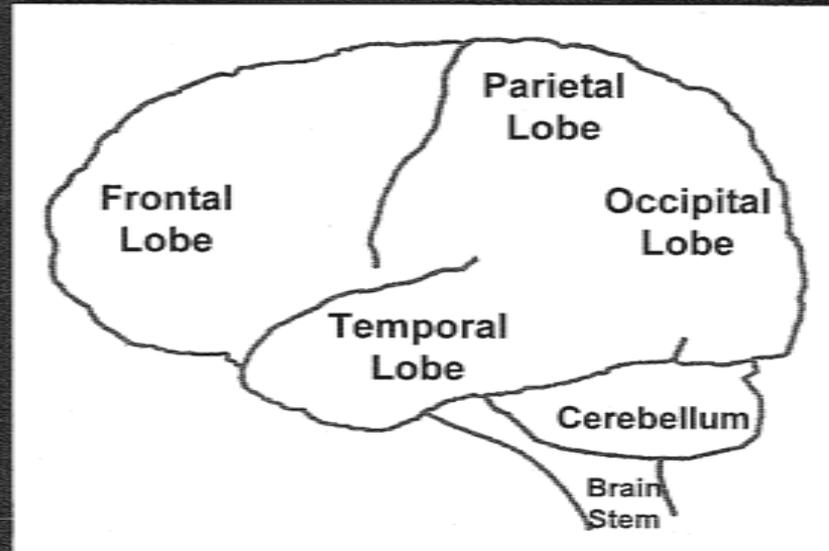
Simplified Brain Behavior Relationships

Frontal Lobe

- Initiation
- Problem solving
- Judgment
- Inhibition of behavior
- Planning/anticipation
- Self-monitoring
- Motor planning
- Personality/emotions
- Awareness of abilities/limitations
- Organization
- Attention/concentration
- Mental flexibility
- Speaking (expressive language)

Temporal Lobe

- Memory
- Hearing
- Understanding language (receptive language)
- Organization and sequencing



Parietal Lobe

- Sense of touch
- Differentiation: size, shape, color
- Spatial perception
- Visual perception

Occipital Lobe

- Vision

Cerebellum

- Balance
- Coordination
- Skilled motor activity

Brain Stem

- Breathing
- Heart rate
- Arousal/consciousness
- Sleep/wake functions
- Attention/concentration

Attachment/Environment

Attachment Shapes Behavior

- Four attachment styles
 - Secure
 - Avoidant
 - Ambivalent
 - Disorganized



Protective Factors

Secure

- Establishes close relationships
- Sense of security
- Resilient to stress
- Regulates emotions
- Makes sense out of their lives



Neurobiology of Attachment

- Secure attachment generates positive mood states. High levels of dopamine and opiates promote the stop circuits (pre-frontal cortex critically important for imprinting).
- Self-regulatory systems (stop circuits) are located in the prefrontal cortex, especially orbital prefrontal cortex. (Damasio, 1994; Pribram, 1987)

Core Features of Emotional Development

- Ability to identify and understand one's own feelings,
- Accurately read and comprehend emotional states in others,
- Manage strong emotions and their expression in a constructive manner,
- Regulate one's own behavior,
- Develop empathy for others,
- Establish and sustain relationships



Risk Factors

What may cause cognitive and behavioral problems?

Avoidant

Studies have found that when parents are rejecting or unavailable to their child, the child may avoid close emotional connection to others.



Ambivalent Attachment

Studies find that if a caregiver's communication style is inconsistent when interacting with their child, the child may develop anxiety and insecurity.



Disorganized Attachment

Studies find that when caregivers relationship with their child is disoriented or terrorizing the child may become disorganized and chaotic. This leads to:

- poor self regulation especially with mood
- ineffective social communication
- academic problems
- severe emotional problems



Neurobiological Implications

- Studies show poor attachment results in permanent alterations in neurons in the stop and go circuits (Lewis et al., 1990; Martin et al., 1991; Rosenblum et al., 1994; van der Kolk 1987)

- Poor self-regulations of mood causes problems in directing emotions.



- Source of shame results in chronic difficulties in self-esteem regulations



(Shore 1996)

Neurobiological Implications

- Shore postulates adverse social experiences during early critical periods result in permanent alterations in, for example, opiate, dopamine, norepinephrine, and serotonin receptors.
- Increases corticosteroid levels during infancy selectively induce neural cell death in the “affective centers” in the limbic system. (Shore, 1996)

Brain Behavior Relationships

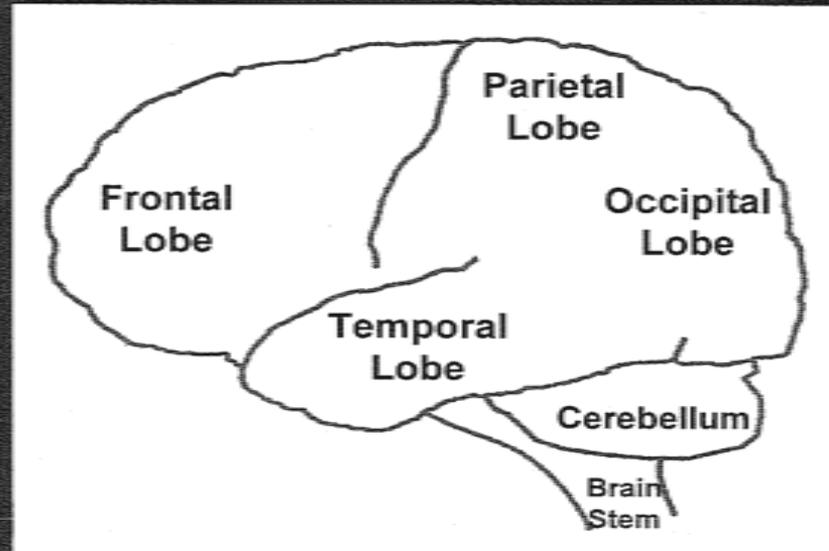
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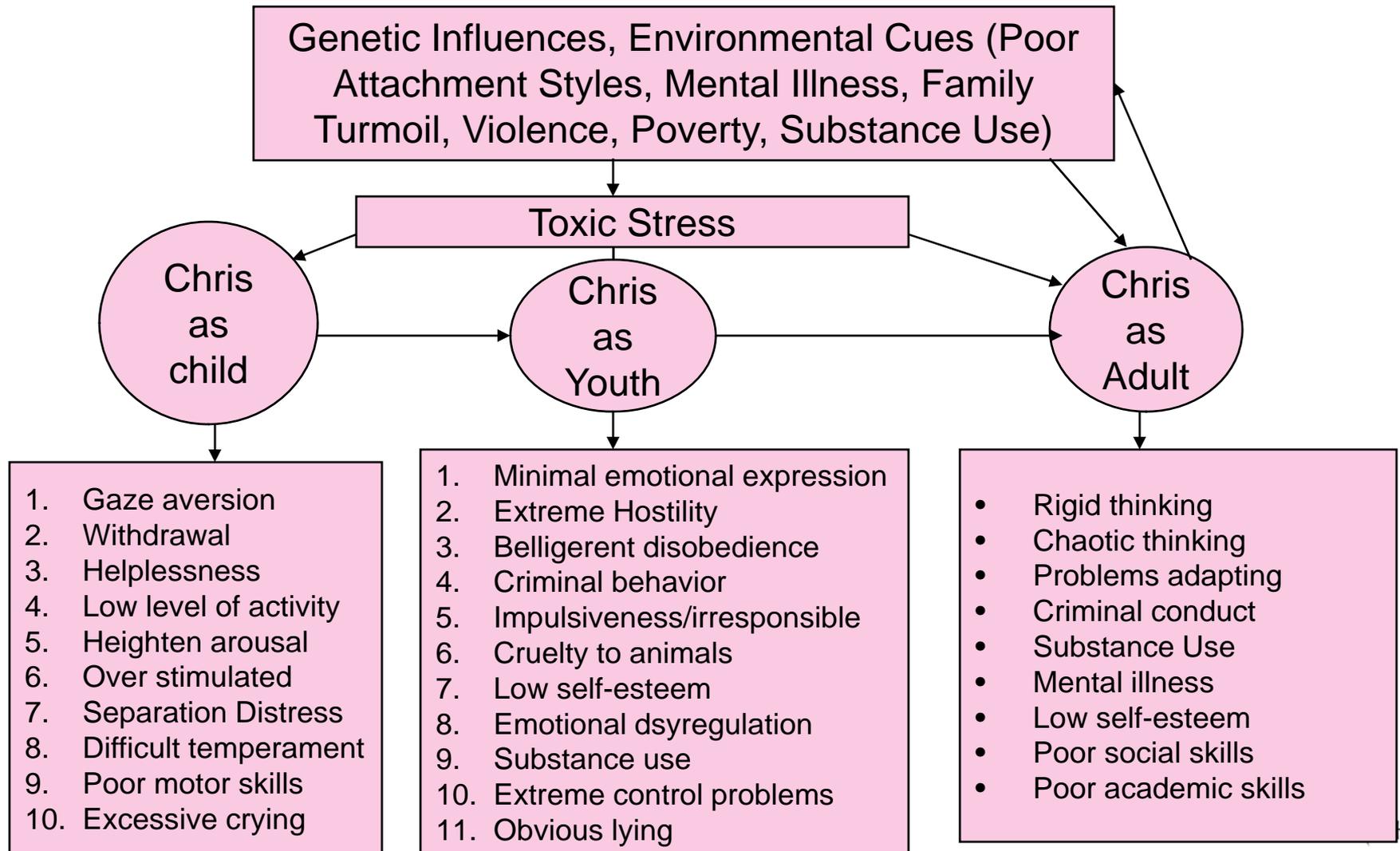
30 Year Longitudinal Study on children living in poverty

- 30 year study in Quincy, MA reflects how attachment, environment and genes contribute to the health of a child. Couples arguing had an adverse effect to children.
- Experience is important, but it along does not determine a child's outcome.
- In series of studies, researcher show that the measure of quality of care provided by caregivers predicted later security, self-control, curiosity, flexible self-control and positive peer functioning of the child (Sroufe, et. Al. 2005)

Brain as self-organizing system

- Self-organization develops in the context of a relationship with another self, another brain i. e., care giver (Shore, 1996)
- Caregiver acts as external regulator of experience-dependent growth of the infant's nervous system, whose components are rapidly organizing, disorganizing and reorganizing the brain during the first 2 years of life.

Impact of Toxic Stress



Earned Secure Attachment

Resolutions of unhappy childhood experiences occur when a person finds meaning in the healing/compensatory process. (Jenkins 1996)



Faces of Trauma

- Trauma Definition
- Trauma informed services

Face of Trauma



What is Psychological Trauma?

Cluster of symptoms, adaptations, and reactions that interfere with daily living for individuals:

- who experience extreme suffering
- witness or survive trauma
- who are re-traumatized

Trauma Affects Victims on Different Levels

- Cognitive- thoughts, perceptions
- Affective-emotions
- Somatic-feelings, body memories
- Behavior- passive, angry, aggressive
- Spiritual-soul, essence, energy

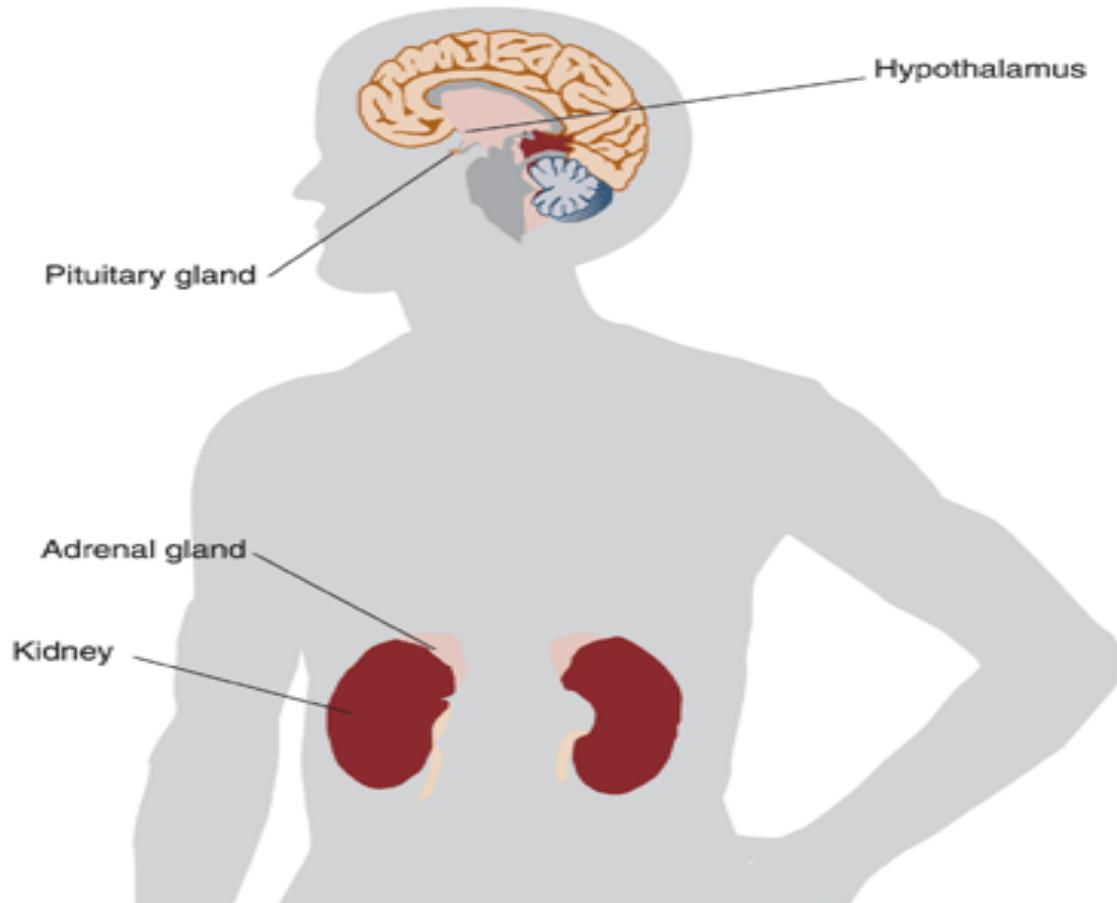


Biology of Trauma

- Fight, flight or freeze
- Over development of stress response alter brain development
- Trauma impacts attachment phase



HPA Axis



Autonomic Nervous System

- Sympathetic nervous system- priming the body for action
- Parasympathetic nervous system- rest and repose



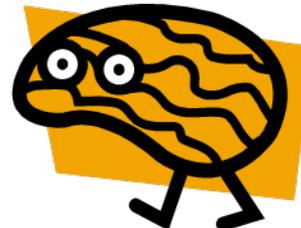
Study on What Happens in the Brain During Trauma?

- Subject's cerebral flow increases (Go circuits)
 - right medial orbitofrontal cortex (executive function)
 - insula (mapping emotions to the body)
 - amygdala (processes emotions and memories)
 - anterior temporal lobe (creating memories and primary auditory cortex)

Relative deactivation (Stop circuits)

- left anterior prefrontal cortex (especially speech area)

(Van Der Kolk, 2006)



What Does It Mean?

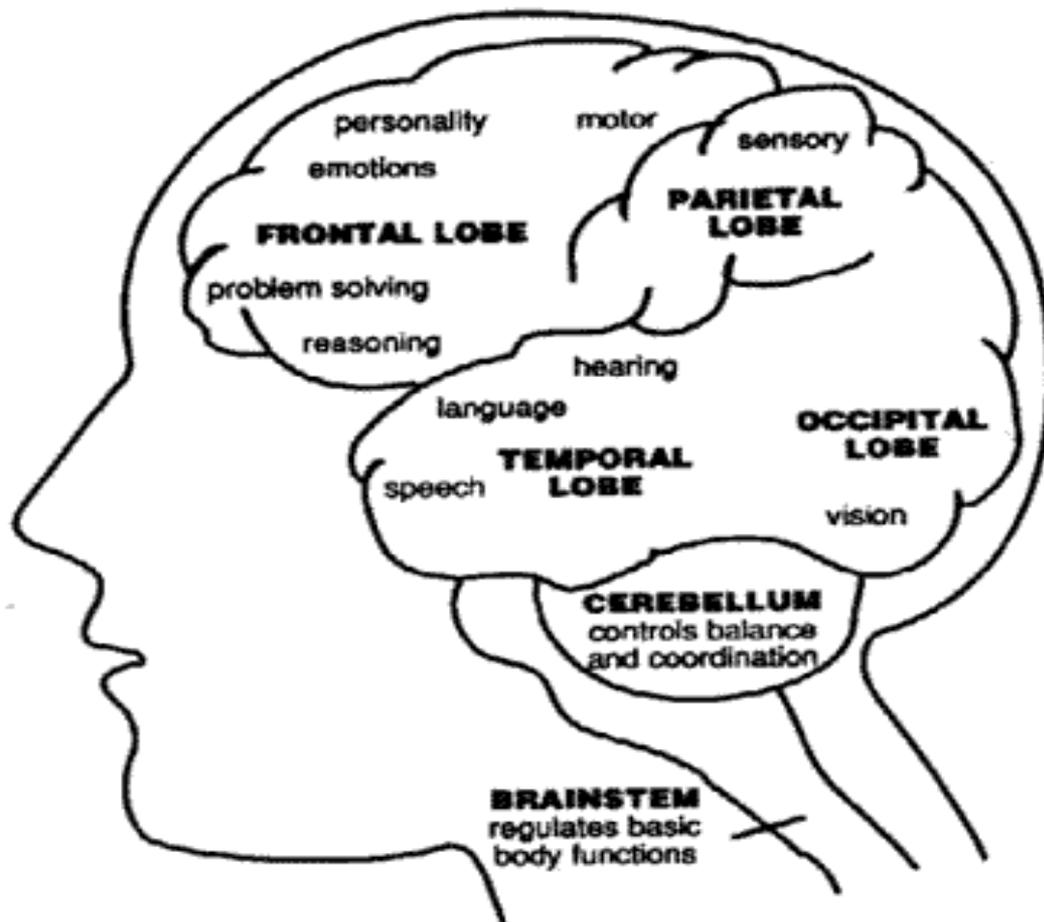
This study suggests that when individuals are reminded of a personal trauma they:

- activate brain regions that support intense emotions
- deactivate regions that inhibit those emotions and therefore cannot translate experience in to language.

(Van Der Kolk, 2006)



Trauma impairs parts of the brain



Post-traumatic Stress Disorder (PTSD)

According to the DSM IV 2R, a person:

- is involved in intense helplessness, fear or horror,
- can't control the traumatic event,

All or part of the following symptoms last over a month:

- re-experiencing trauma
- arousal symptoms
- avoidance

Symptoms of PTSD

- Arousal symptoms- hyper vigilance, startle reflex, panic attacks
- Numbing and avoidance symptoms- dissociation, denial confusion,
- Re-experiencing trauma in forms of nightmares and flasbacks

Adverse Childhood Experience (ACE) Study

- Large-scale study, over 17,000 Kaiser patients
- Compared adverse childhood experiences against adult health status
- Adults who experienced childhood physical, emotional, and sexual abuse.



Results

- 2 x more likely to be smokers
- 2 x more likely to be alcoholic
- 10 x more likely to inject street drugs
- 12 x more likely to attempt suicide
- Depressive disorder more common
- Sleep problems



Addiction

A Brain Disease

Theories of Addiction

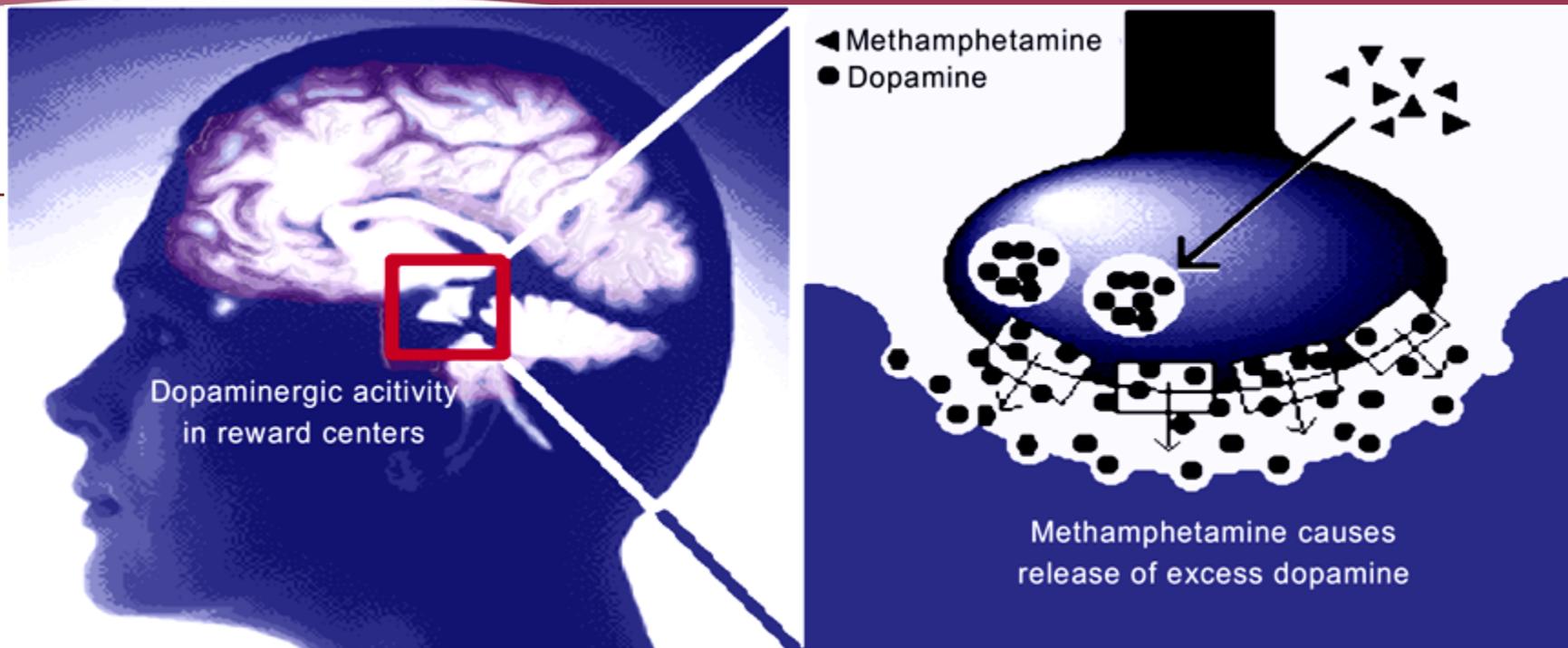
- Heredity
- Environment
- Psychoactive Drug
- Compulsive Behavior



Psychoactive Drugs

- Psychoactive drugs affect the functioning of the central nervous system,
- Excessive, frequent, or prolonged use of alcohol or other drugs change one's neurochemistry
- This influences not only the person's reaction to those substances when they are used but also the level at which they are used.

(Inaba and Cohen, 2000)



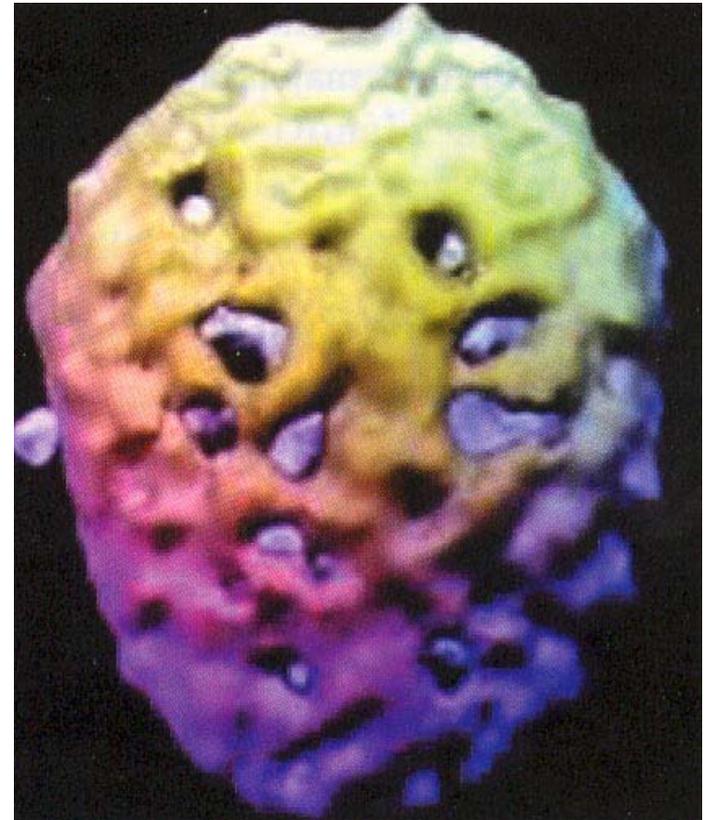
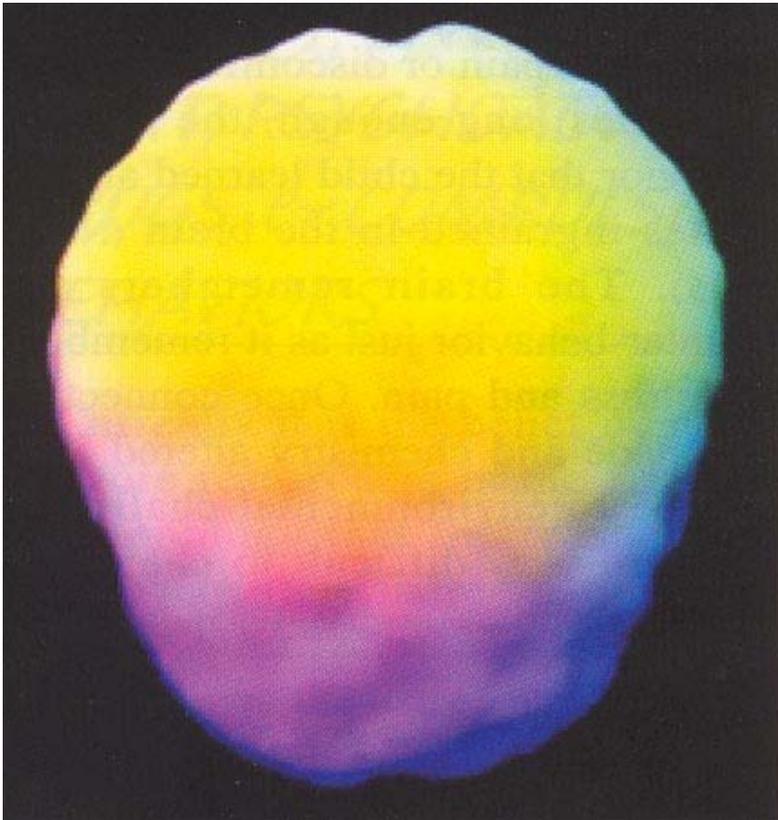
Methamphetamine causes release of dopamine in pleasure and reward pathway

Reduction in MAO (antidepressant)

Changes in serotonin levels

(Rawson, 2007)

Normal versus Meth Affected Brain



Results of Methamphetamine Study

- Research on brain activity with 46 abstinent meth abusers who completed a 28 day drug treatment residential program.
- They performed two tasks, one that required decision making and one required simple response.
- A year later 40 out of 46 individuals were located, 18 relapsed
- Participants who showed greater activity in selected brain regions during decision making tasks were likely to remain abstinent. (right insula, right inferior parietal lobule, right middle temporal gyrus, left caudate/putamen, left cingulate

CYRUS (NIDA Notes, 2006)

Alcohol Alters Prefrontal Cortex

- Study at the Center for Drug and Alcohol Program at the Medical University of South Carolina:
NMDA receptors were compromised
- Alters prefrontal cortex through ion channel disruption
- Normal risk/benefit assessment is disrupted

(Weitlauf & Woodward, 2008)

Compulsive Behavior or Addiction?

- Gambling, eating and sexuality disorders appear to be caused by dysfunctional brain neural networks
- Behavioral compulsions often accompany or follow drug addiction
- Behavioral compulsions affect many of the same brain circuits affected by psychoactive drugs
- But, the difference is that you do not get a reward (high) when exhibiting compulsive behavior. (Mate, 2008)

Triggers

A trigger is something that sets off an action, process or series of events such as panic, cravings, etc. The trigger is generated by an internal event (thinking of drinking) or external event (hear the same music that you heard the first time you got high)

Final Words- Hope

- Hope springs eternal!
- People are resilient!
- Recovery Rocks!



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Where to Get More Information

Behavioral Health Recovery Management
<http://www.bhrm.org/>

National Institute on Alcohol Abuse and Alcoholism
<http://www.niaaa.nih.gov/>

NIDA <http://www.nida.nih.gov/Infofacts/otherinfo.html>

Partners for Recovery <http://www.pfr.samhsa.gov/>

Co-occurring Center for Excellence <http://coce.samhsa.gov/>
<http://www.annafoundation.org/MDT.pdf>

National Center for Trauma-Informed Care <http://mentalhealth.samhsa.gov/nctic/>
Women, Violence and Trauma
<http://mentalhealth.samhsa.gov/topics/explore/womenandtrauma/>

National Trauma Consortium <http://www.nationaltraumaconsortium.org/>
http://www.index.va.gov/search/va/va_search.jsp?QT=PTSD

Research articles on war and trauma <http://www.trauma-pages.com/search/search.pl?Match=1&Realm=Psy%2FPTSD&Terms=war>

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