

# The Healing Power of Relationships and Connection.



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# Adolescents: Brain Under Construction



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# Introductions and Intentions

## ■ Dr. Jean Clinton

- Would like for people to leave the day with a better understanding of youth behaviors by understanding how the brain works
- Would like people to understand that they can influence the development of the brain and behaviour through the power of their relationships

# Behaviour has meaning

- All behavior has a reason!
- All behavior happens in a context!
- All behavior contains operating Needs and/or Goals!

It is up to us to Pay Attention and Discover!  
“What do we KNOW about this?”



# Why do we care about brain?

You are your brain.



Time Magazine Dr J  
Stieben

**BUT**  
Your brain is not just  
produced by your genes

Your brain is sculpted by  
a lifetime of  
experiences



Dr R Gibb  
UofLethbridge



Adolescence is a time of growth and maturation in the brain.



# Relationships matter



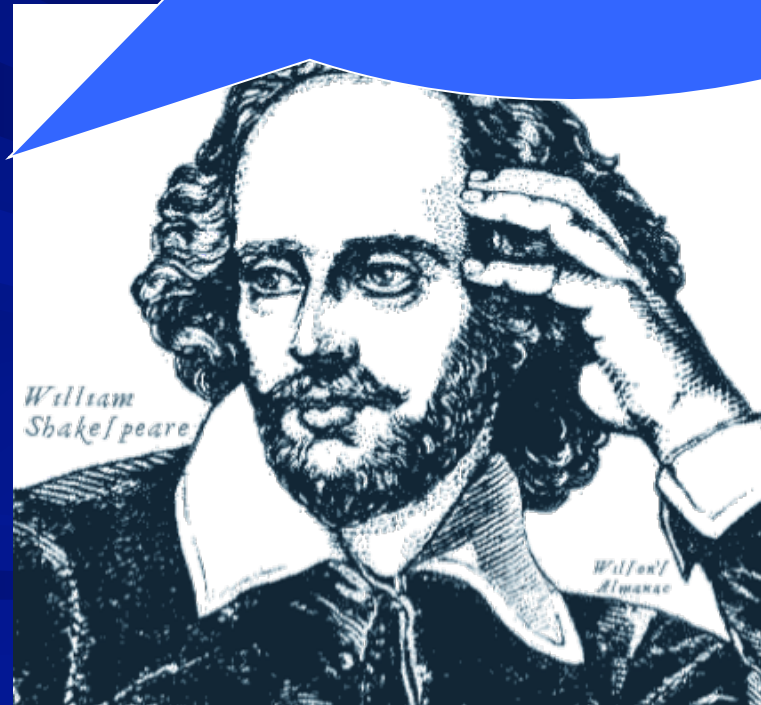
# Adolescents

Fickle in their desires  
Which are as transitory as  
they are vehement!



Aristotle

Getting wenches with child,  
wronging  
the ancientry,  
stealing, fighting...and their  
Brains are boiled!!





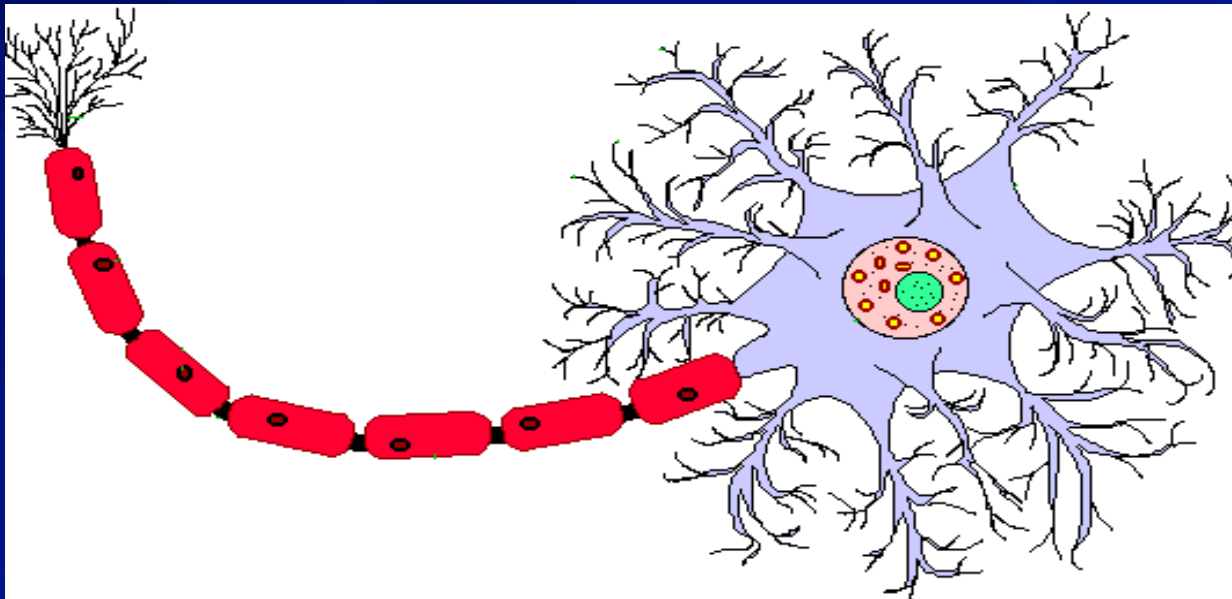
## 3 Key Points of Brain Maturation

- The brain matures by becoming more specialized (gray matter) and more “connected” (white matter)
- A changing prefrontal/limbic balance affects reward circuitry, hot vs cold cognition, temporal discounting, and decision making
- Enormous plasticity confers both vulnerability and opportunity

# Emerging Adulthood

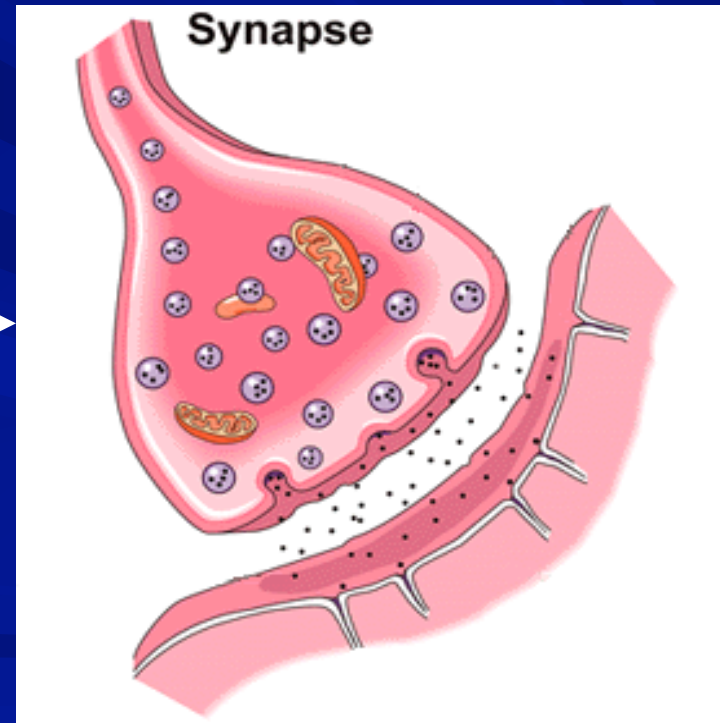
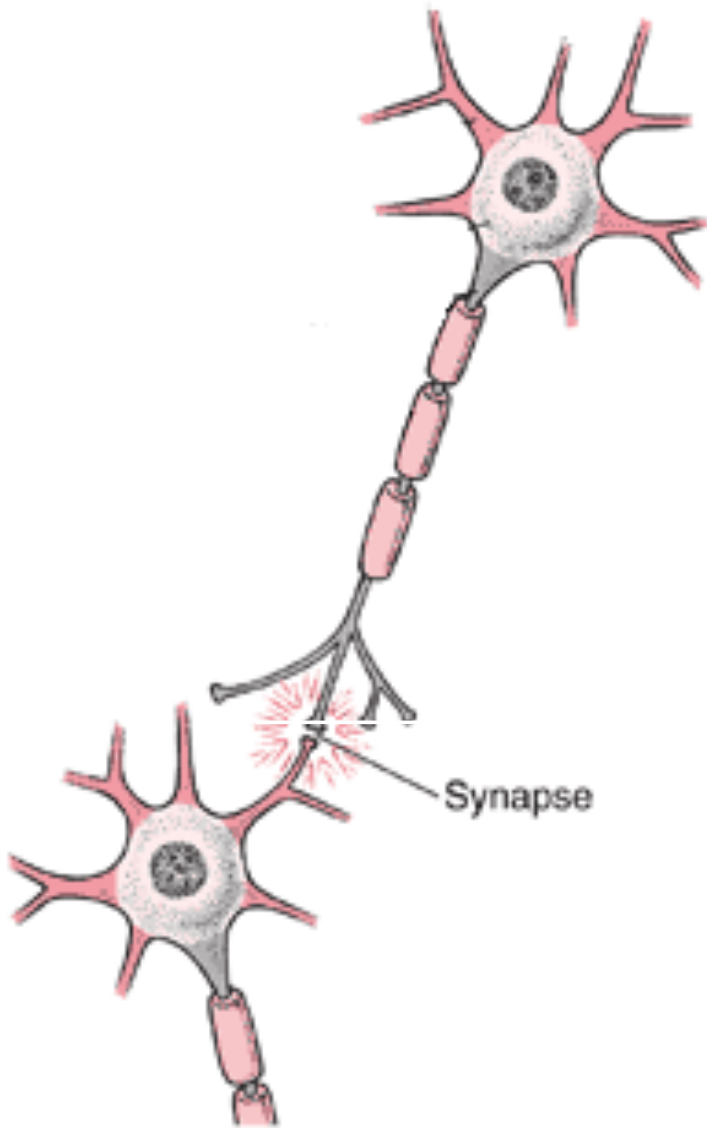
- 18-25
- A time of self focused exploration
- Facilitated by a socially sanctioned moratorium from adult responsibilities
- Larger number of demographic transitions
- More autonomy
- Fewer responsibilities
- Arnett, Cote and others

All of the areas of the brain  
...like sound, communication, problem-solving...  
are made of cells called  
**NEURONS**



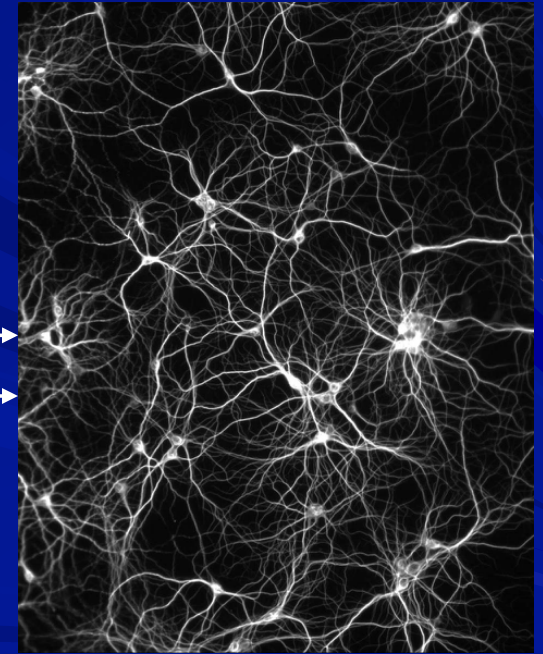
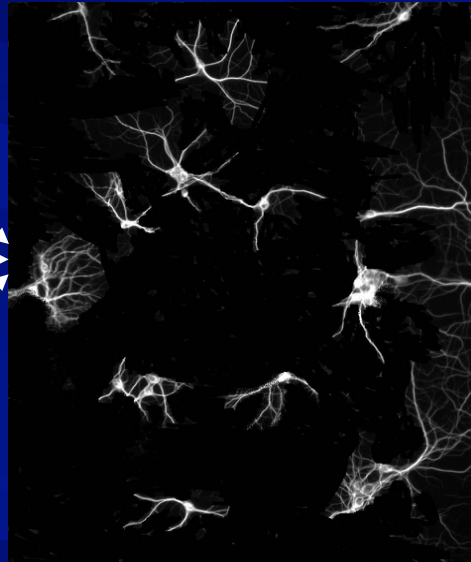
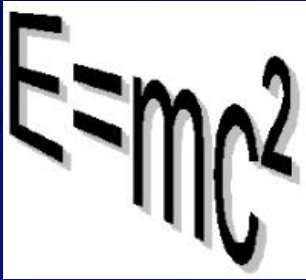
They transmit information all around the brain.

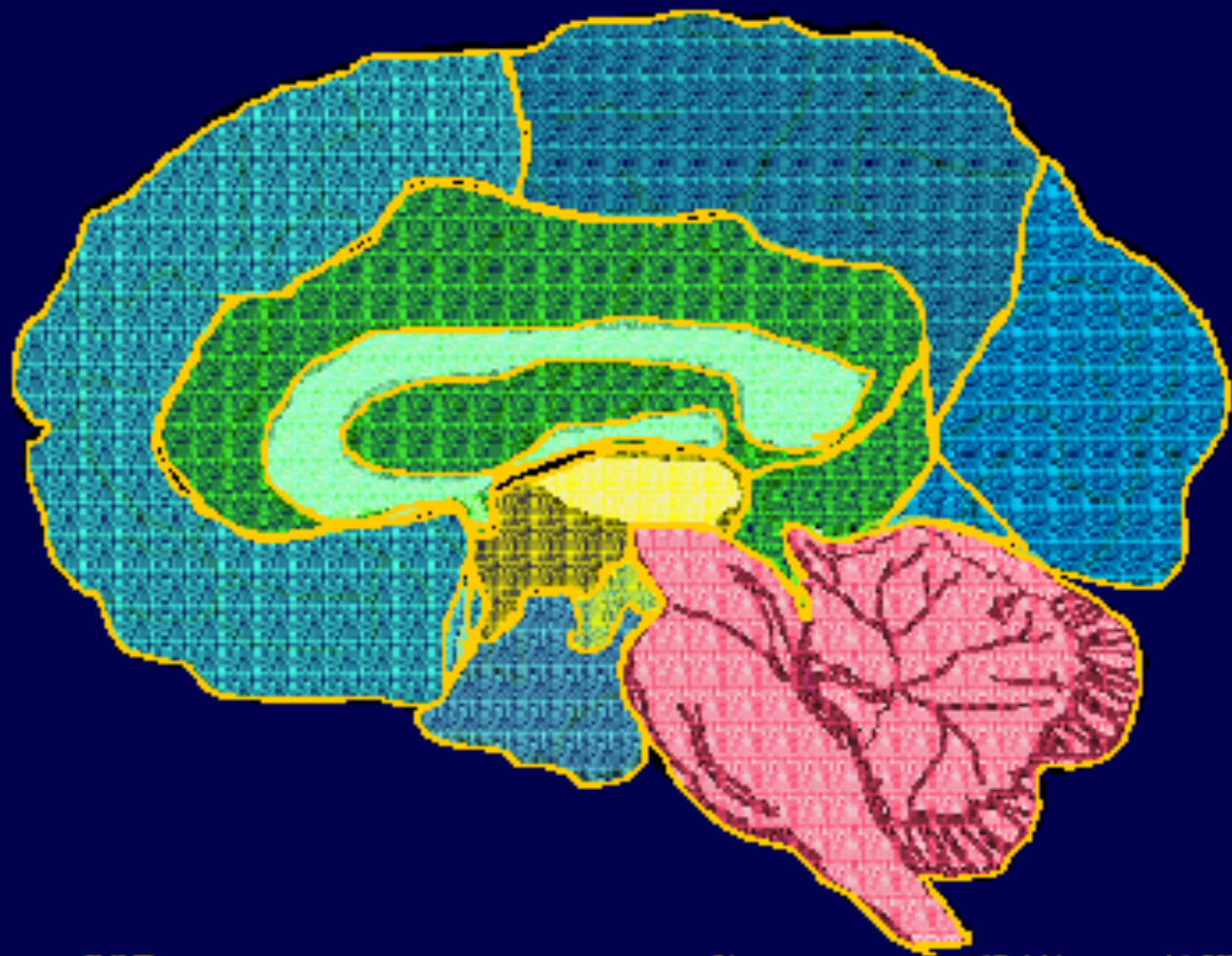
Neurons pass information through CONNECTIONS with other neurons at SYNAPSES

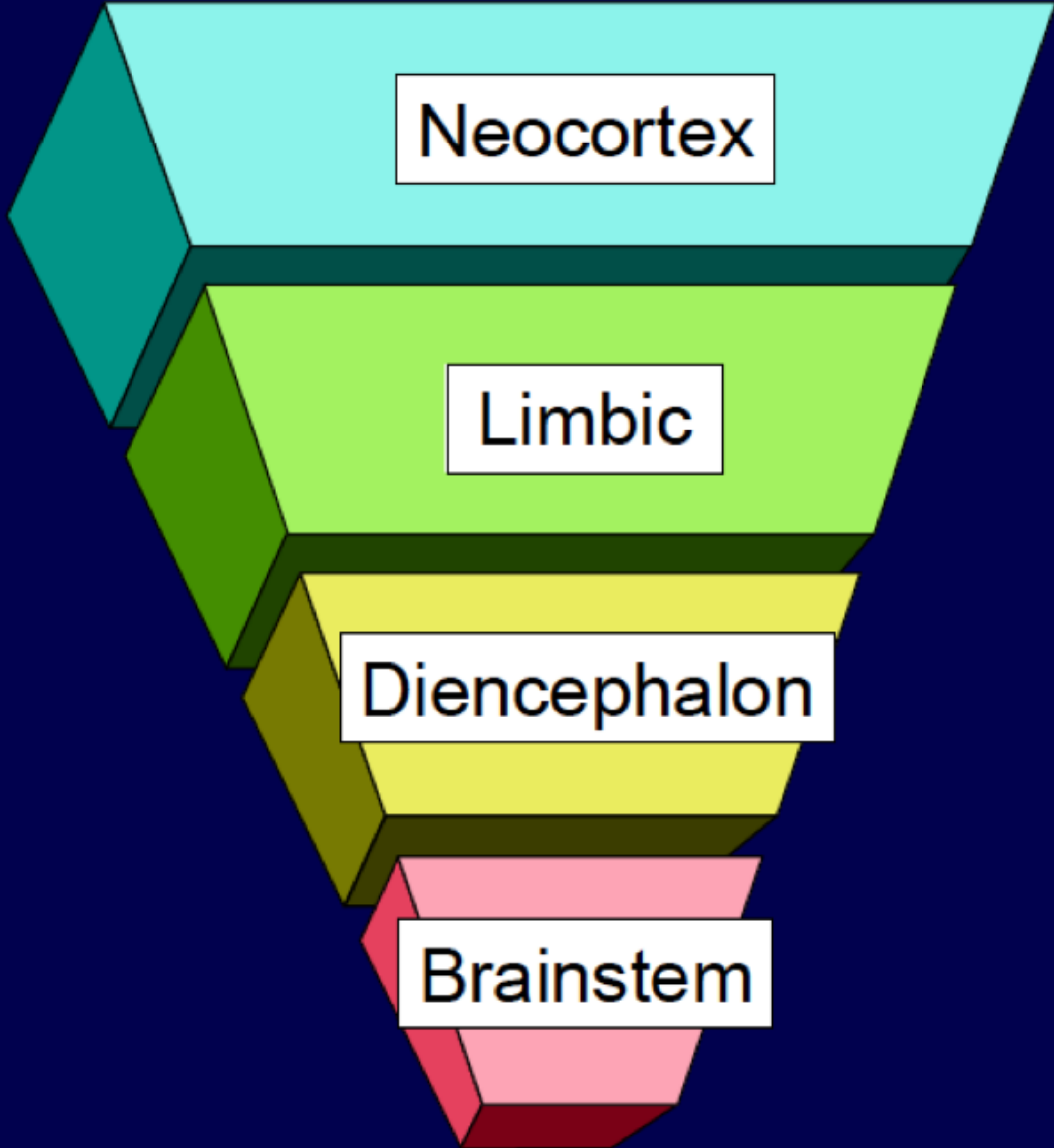




Learning helps our neurons GROW.  
The more we learn, the more connections they make.







Neocortex

Limbic

Diencephalon

Brainstem

Abstract thought  
Concrete Thought  
Affiliation

"Attachment"

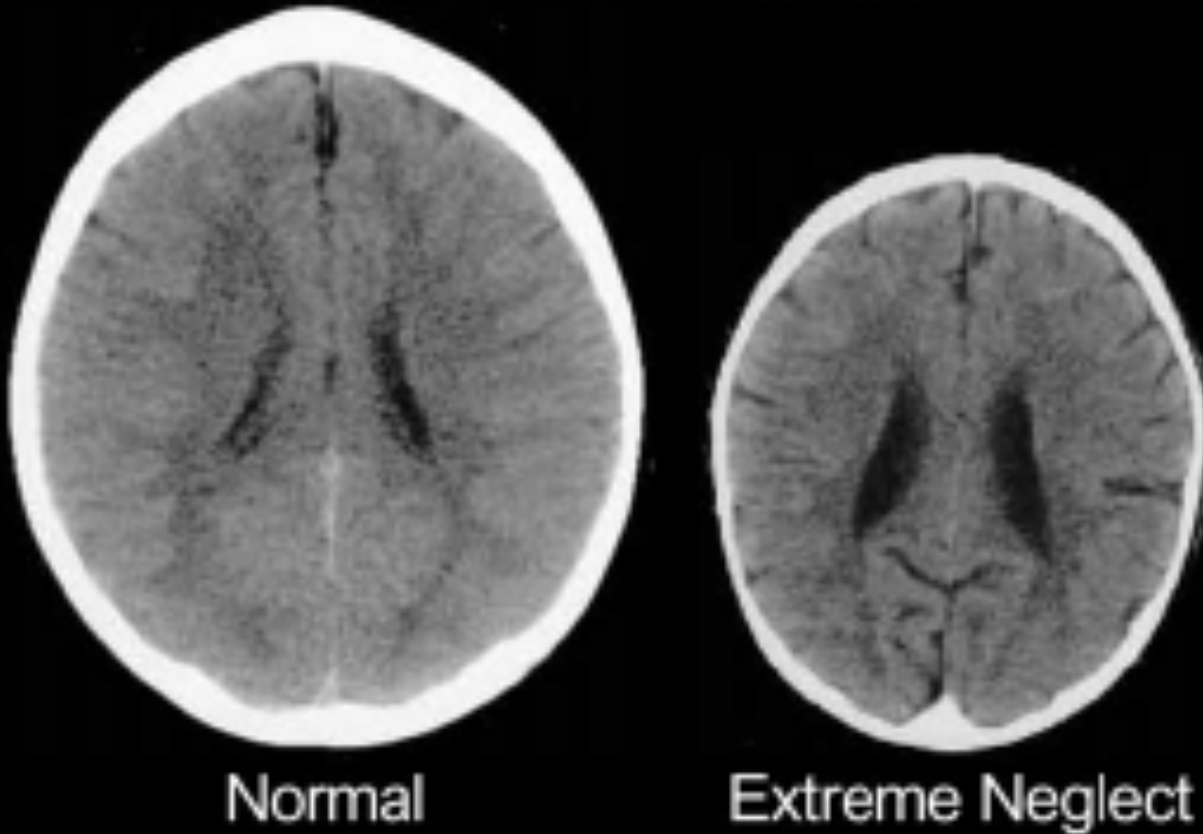
Sexual Behavior  
Emotional Reactivity  
Motor Regulation

"Arousal"

Appetite/Satiety  
Sleep

Blood Pressure  
Heart Rate  
Body Temperature

## 3 Year Old Children



Source: Perry, BD., 2002, Childhood Experience and the Expression of Genetic Potential: What Childhood Neglect Tells Us About Nature and Nurture, *Brain and Mind* Vol 3: pp 79-100.

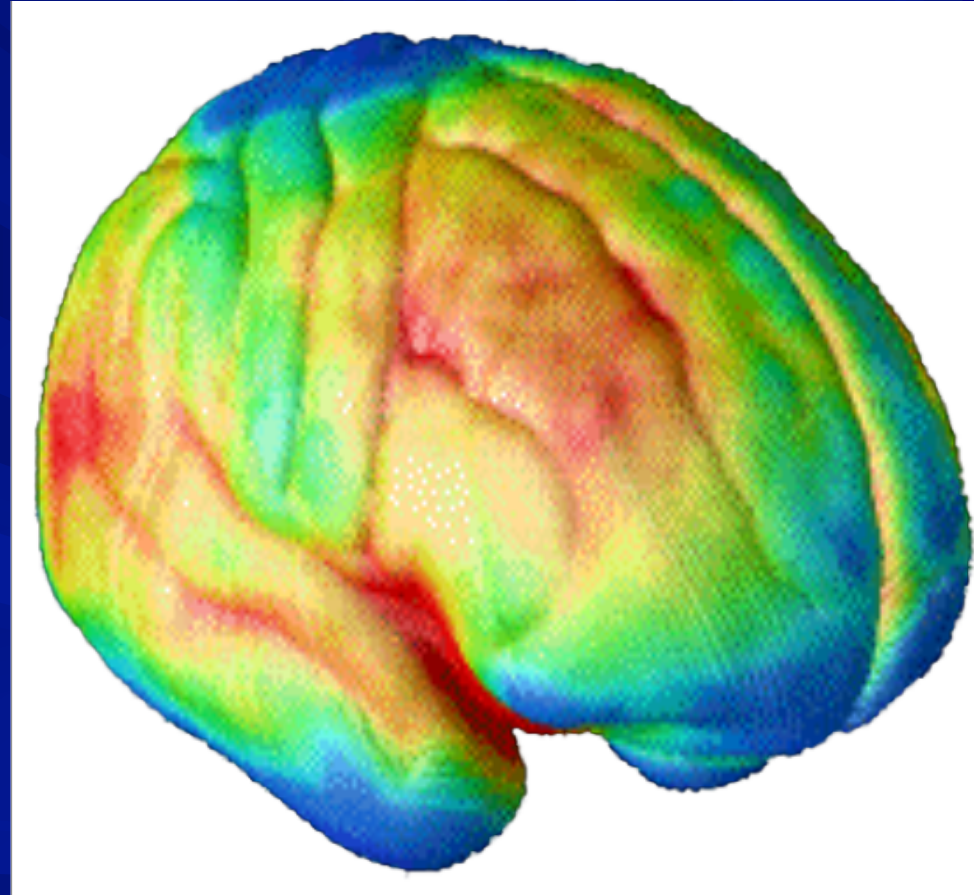


# Brain Development

Maturation Occurs from Back to Front of the Brain

Images of Brain Development in Healthy Youth (Ages 5 – 20)

Blue represents maturing of brain areas



Source: Gogtay, Giedd, et al., 2004.

# Pruning and Remodeling

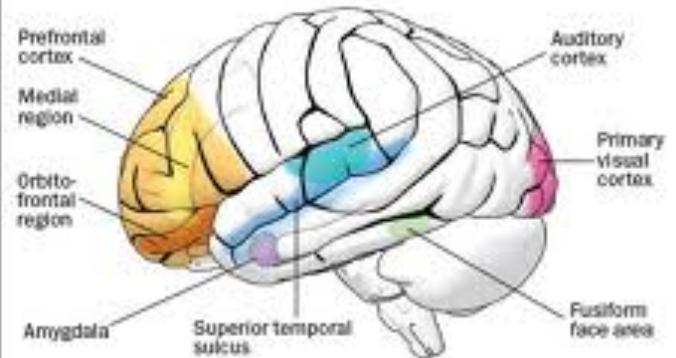


# The Social Brain



## The Social Brain

Perceiving emotion in others requires the collaboration of disparate brain regions. To read feeling in a face, the amygdala, an emotion hub, works with the fusiform face area, which is dedicated to face recognition. The medial prefrontal cortex and superior temporal sulcus read mood regardless of whether the cues come from a face, body or voice. They receive data from visual and auditory cortices, which process sights and sounds.









What emotion do you see?



YURGELUN-TODD

# WHAT YOU SEE IS WHAT YOU GET!



Fear



Contempt



Surprise



Anger



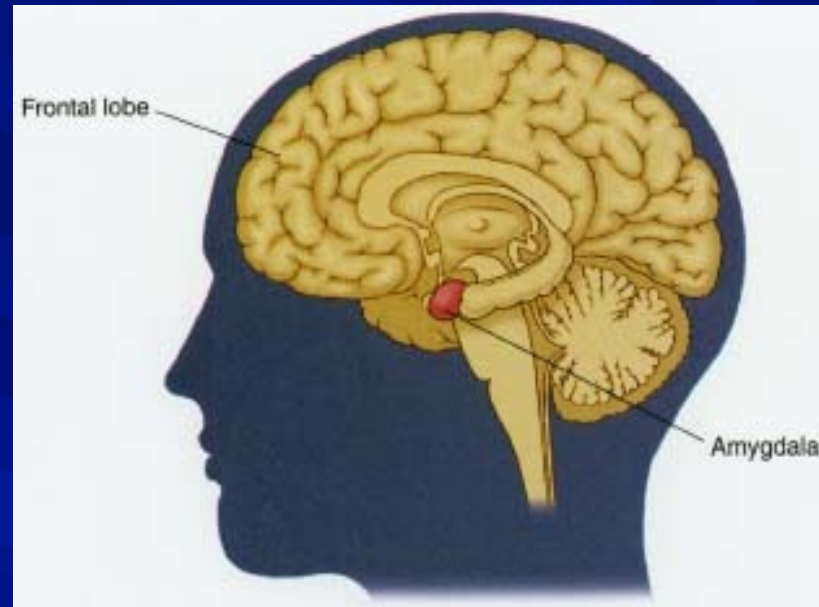
Disgust



Happiness

YURGELUN\_TODD

Sadness



Adolescents use the **Amygdala** (fight or flight response) rather than the **Frontal Cortex** (used by older adults) to read emotions

# Communication Gap

- **Teens are more likely to misinterpret facial expressions of emotion**
- **See anger when there isn't anger**
- **Process in the amygdala**
- **May react quickly**

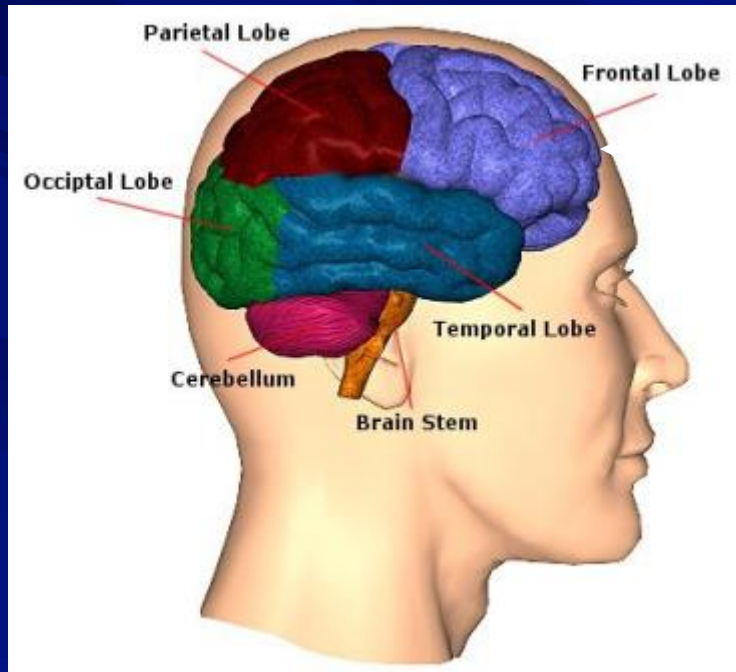




# “Emotional Brain” Development

- Emotional brain dominates
- Prefrontal cortex is not ready to take charge
- Emotional brain seeks pleasure, in the form of novelty, excitement, and risk

# The Frontal Lobes



■ **DEVELOPED** frontal cortex allows one to regulate emotions, solve problems effectively and plan behaviour.

## “Executive Functions”

- **Governing emotions**
  - **Judgment**
  - **Planning**
  - **Organization**
  - **Problem Solving**
  - **Impulse Inhibition**
  - **Abstraction**
  - **Analysis/synthesis**
  - **Self-awareness\***
  - **Self-concept\***
  - **Identity**
- and**
- **Spirituality**

Do it Now!

Think about it



**Limbic System**



**Prefrontal cortex**

**GREATEST OPPORTUNITY...**

**GREATEST VULNERABILITY**

As the adolescent brain is reconfigured it is more susceptible to long lasting damage of drugs, alcohol, and negative experiences. Unfortunately, the brain is most vulnerable at a time when they are most inclined to take risks and to act impulsively...”

*(Jay Giedd, NIH 2004)*



# Scenarios

- What we Think....
- Affects how we feel....
- Affects how we act...

# What is Trauma?

Trauma arises from an inescapable stressful event that overwhelms an individual's coping mechanisms

(van der Kolk & Finkelhor, 1995).



## Childhood Trauma:

Experience or witnessing of an event that involves:

- \* Actual or threatened death or serious injury to self or others
- \* Threat to psychological or physical integrity of self or others

(Zero to Three, 2004)

**Traumatic  
Event**



**Prolonged  
Alarm  
Reaction**



**Altered  
Neural  
Systems**



# What is trauma?

*Interpersonal violence tends to be more traumatic than natural disasters* because it is more disruptive to our fundamental sense of trust and attachment, *and is typically experienced as intentional* rather than as “an accident of nature.”

(International Society for the Study of Trauma and Dissociation, 2011)

# What is Traumatic?

The same event can be experienced, adapted to, and carried forward in different ways by different children.

So, it is the response by the individual to the experience or event that is “traumatic” – not the event itself.



# *TRAUMA*



*When trauma occurs early in life, children do not develop the capacity to regulate their experience...to calm themselves down when they're upset, to sooth themselves, to interact in appropriate ways with other people to learn from their behavior.*

Margaret Blaustein, 2004  
Director of Training,  
The Trauma Center at JRI,  
Boston, MA



# ***EFFECTS OF ABUSE OR NEGLECT***

*According to a National Institute of Justice study, abused and neglected children were 11 times more likely to be arrested for criminal behavior as a juvenile, 2.7 times more likely to be arrested for violent and criminal behavior as an adult, and 3.1 times more likely to be arrested for one of many forms of violent crime (juvenile or adult) (English, Widom, & Brandford, 2004).*



Trauma-Informed Care (TIC) provides a new model under which the basic premise for organizing services is transformed

*from:*

*“What’s  
wrong with  
you?”*

*to:*

*What has  
happened  
to you?”*



Trauma can occur at any age.

Trauma can effect any:

- race
- gender
- ethnicity
- socio-economic group
- community
- workforce



# Lasting Effects of Trauma

- Effects on brain development and functioning are often global
  - Physiological effects
  - Physical effects
  - Emotional effects
  - Social effects



# Effects of Trauma Exposure,

- **Attachment.** Traumatized children feel that the world is uncertain and unpredictable. They can become socially isolated and can have difficulty relating to and empathizing with others.
- **Biology.** Traumatized children may experience problems with movement and sensation, including hypersensitivity to physical contact and insensitivity to pain. They may exhibit unexplained physical symptoms and increased medical problems.
- **Mood regulation.** Children exposed to trauma can have difficulty regulating their emotions as well as difficulty knowing and describing their feelings and internal states.

# Effects of Trauma Exposure, cont'd

- **Dissociation.** Some traumatized children experience a feeling of detachment or depersonalization, as if they are “observing” something happening to them that is unreal.
- **Behavioral control.** Traumatized children can show poor impulse control, self-destructive behavior, and aggression towards others.
- **Cognition.** Traumatized children can have problems focusing on and completing tasks, or planning for and anticipating future events. Some exhibit learning difficulties and problems with language development.
- **Self-concept.** Traumatized children frequently suffer from disturbed body image, low self-esteem, shame, and guilt.



# A Young Child's response to stress may include

- Excessive day dreaming
- Disengagement
- Opposition
- Defiance
- Motor hyperactivity
- Out of control accident prone behaviour
- Anxiety, mood swings,
- impulsive behaviours
- Sleep problems



# “Available” information about the youth and the youth’s story.

Negative Social History

File Information

Labels

Experts

My  
Story?

Theories

Assumptions

DSM Diagnoses

Our Story

Stereotypes &  
Generalizations



Medication

# Getting to know the youth and the youth's story.

Negative Social History

File Information

Medication

Labels

Experts

Knowledge

Opinions

Culture

Goals

Dreams

Resiliencies

Strengths

My Story

Sensitivities

Values

Experiences

Individual Uniqueness

Theories

Our Story

Stereotypes &  
Generalizations

Assumptions

DSM Diagnoses



Trauma Informed	Non-Trauma Informed
Recognition of high prevalence of trauma	Lack of education on trauma prevalence & “universal” precautions
Recognition of primary and co-occurring trauma diagnoses	Over-diagnosis of Schizophrenia & Bipolar D., Conduct D. & singular addictions
Assess for traumatic histories & symptoms	Cursory or no trauma assessment
Recognition of culture and practices that are re-traumatizing	“Tradition of Toughness” valued as best care approach



Trauma Informed	Non-Trauma Informed
Power/control minimized - constant attention to culture	Keys, security uniforms, staff demeanor, tone of voice
Caregivers/supporters – collaboration	Rule enforcers – compliance
Address training needs of staff to improve knowledge & sensitivity	“Patient-blaming” as fallback position without training
Staff understand function of behavior (rage, repetition-compulsion, self-injury)	Behavior seen as intentionally provocative

Trauma Informed	Non-Trauma Informed
Objective, neutral language	Labeling language: manipulative, needy, “attention-seeking”
Transparent systems open to outside parties	Closed system – advocates discouraged

(Fallot & Harris, 2002; Cook et al., 2002, Ford, 2003, Cusack et al., Jennings, 1998, Prescott, 2000)

# Helpful Questions

Some of Steve's Favorites....

- Tell me about that?
- Tell me more about that?
- How was that for you?
- What was that like (for you)?
- What is that like for you?
- What does that mean?
- What do you mean when you say \_\_\_\_\_?
- AVOID "WHY" Questions
  - "Really?...Paraphrase as a question"
  - "What do you think that might be about?"
- ALLOW FOR SILENCES
- Million Dollar Questions

# Three Levels of Stress

## Positive

Brief increases in heart rate,  
mild elevations in stress hormone levels.

## Tolerable

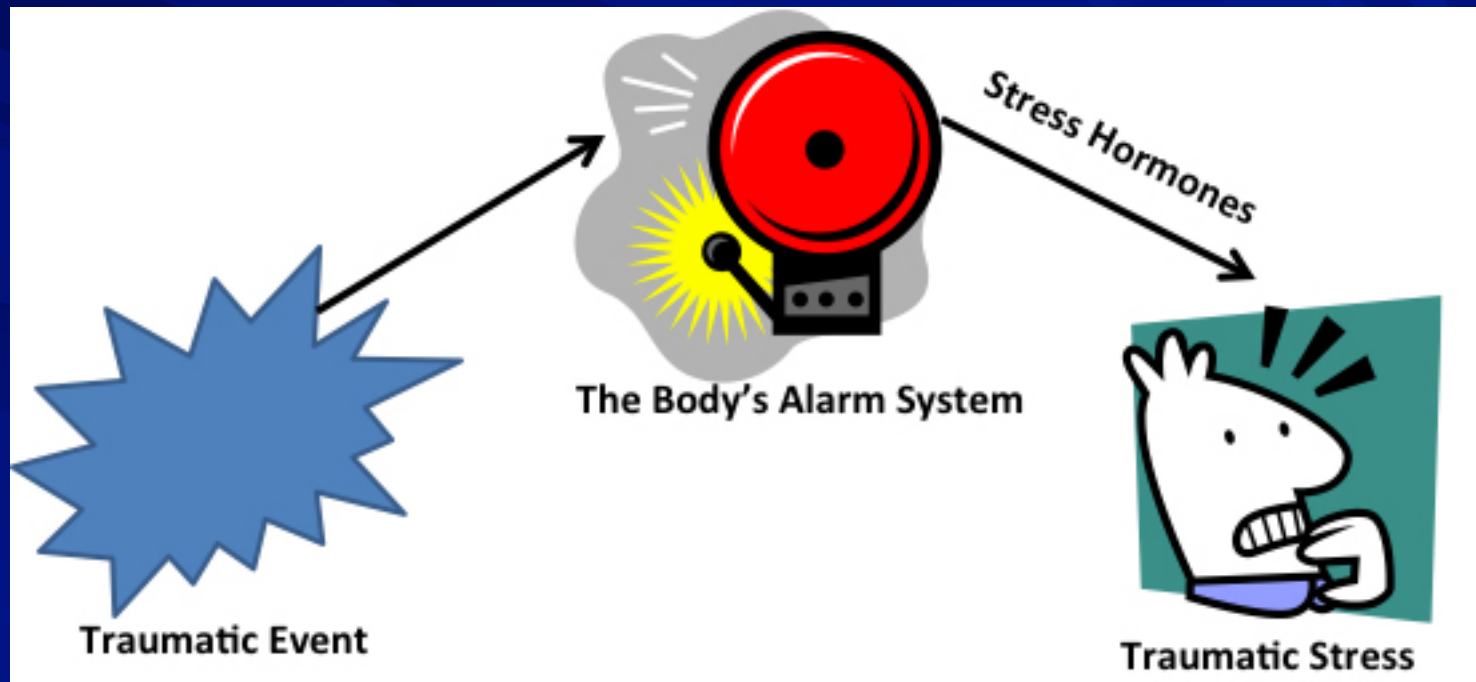
Serious, temporary stress responses,  
buffered by supportive relationships.

## Toxic

Prolonged activation of stress response systems  
in the absence of protective relationships.



# Stress system



Imagine you are walking home and you see a bear...



03-002



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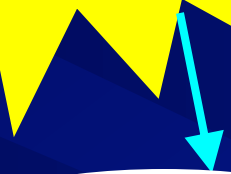
-

Cortisol

Cortisol

CRF

ACTH



# The Stress Response Cycle



Adrenaline & Cortisol = Increased Heart Rate & Respiration, Immune System & Frontal Lobes Suppressed



# What happens when the bear is always there...

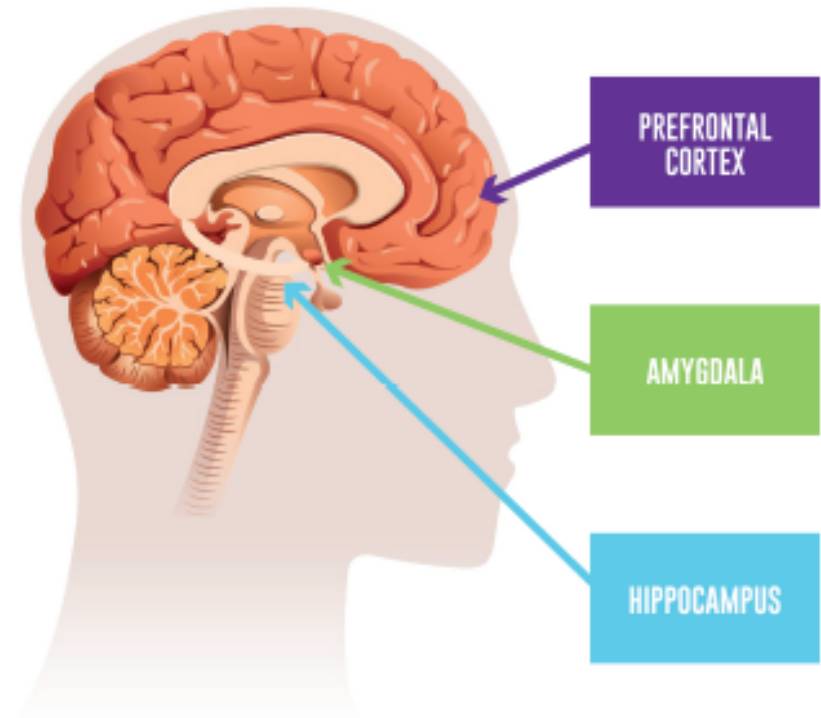
Irritability

Poor memory

Difficulty focusing

Critical thinking difficulty

Increased anxiety and fear



# Amygdala and Hippocampus



# Toxic Stress





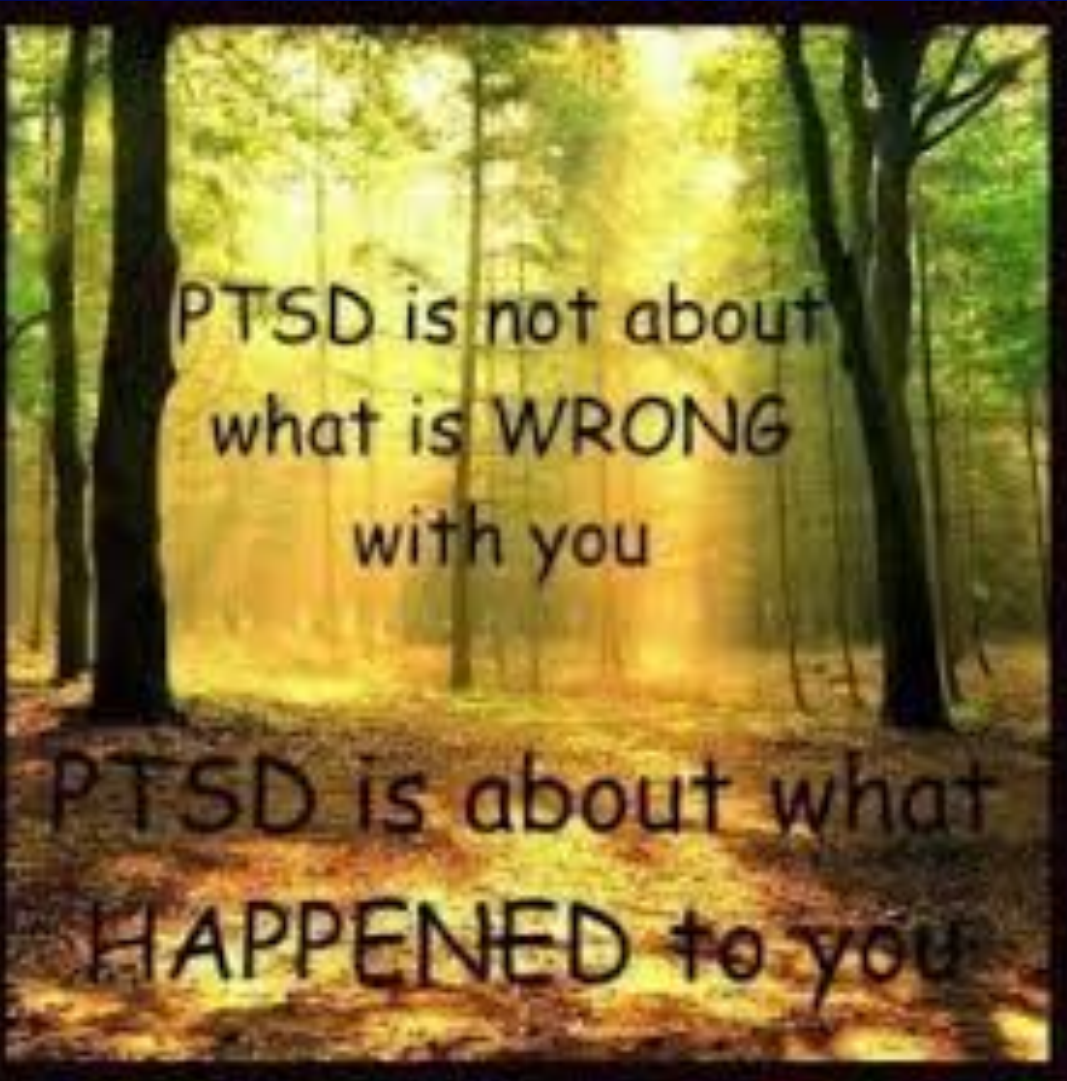


Seth Pollak University of Wisconsin Madison



## A PERSON WITH 4 OR MORE ACES IS:

- 5.13 times as likely to suffer from depression
- 2.42 times as likely to have chronic obstructive pulmonary disease (COPD)
- 2.93 times as likely to smoke
- 3.23 times as likely to binge drink



PTSD is not about  
what is **WRONG**  
with you

PTSD is about what  
**HAPPENED** to you

Changing the fundamental question  
from **“What’s wrong with you?”**  
to **“What happened to you?”**