

# The Neurobiology of Bravery

**How Teaching People to Manage Their  
Stress Response Can Create More  
Effective Bystanders**

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Why do we engage  
bystanders?

What do we hope they  
will do?



# Some Goals of Bystander Education

- Interrupt sexual assaults
- Challenge abusive behavior
- Challenge actions that perpetuate oppression
- Change or reinforce social norms
- Offer support to survivors



How do we get them to  
do it?

# The Brain on Stress





# What is Stress?

- The body's reaction to circumstances that excite, frighten, confuse or endanger
- A physical response that helps us cope with new situations and challenges
- A normal and essential part of everyday life.

\*Trauma First Aide Associates, 2007



# What is Trauma?

- Overwhelming feelings of terror, horror, helplessness, fear, loss of trust, loss of sense of safety, guilt, or shame
- In response to an event that is life-altering, life-threatening, or life deadening.

\* Trauma First Aide Associates 2007

# Difference between Stress and Trauma

## STRESS

- Symptoms will diminish or disappear soon after the cause of stress is removed.

## TRAUMA

- Symptoms persist after situation is over.

\*Trauma First Aide Associates, 2007



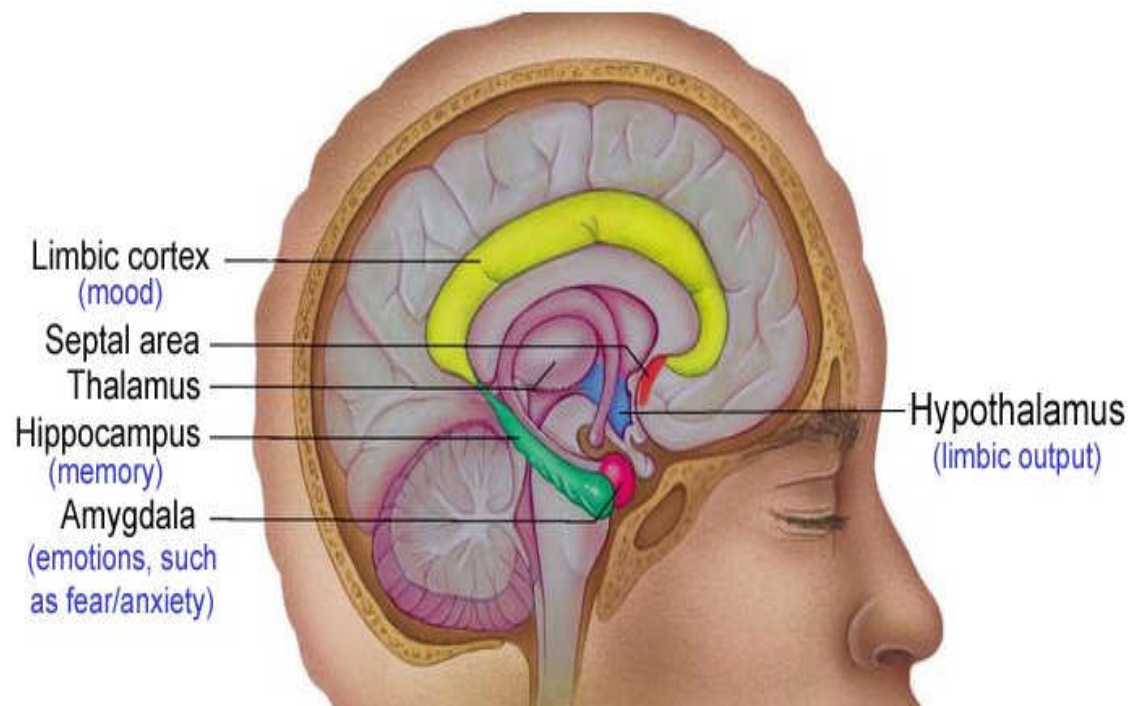


# Stress vs. Trauma

- In stressful situations we return to homeostasis once the stressor is over.
- In traumatic situations people stay stuck on high or low even when the situation is over. People often re-experience feelings associated with the trauma even if the actual threat is over.

# How Our Brains Process Trauma & Stress

## Limbic System



# Axis HPA (Hypothalamus-Pituitary-Adrenal)

*(Cycle of Panic)*

Amygdala  
(scans the senses for signs of threat, danger, change, or stress)



Hypothalamus  
CRF (corticotrophin releasing factor)



Pituitary Gland  
ACTH (adrenocorticotrophic hormone)



Adrenal Glands  
Cortisol (adrenaline, stress hormones)





# What is Adrenaline?

Adrenaline is a stress hormone produced in the body when there is a perceived threat or danger.





## Adrenaline: The “Stress Hormone”

- Produced by your adrenal glands, this “stress hormone” helps regulate blood pressure and the immune system during a sudden crisis (trauma).
- Chronic trauma or deregulation can keep this survival mechanism churning in high gear, having a negative effect.
- Chronically high cortisol levels can cause sleep problems, a depressed immune response, blood sugar abnormalities, abdominal weight gain, and over long periods of time, can cause damage and cell death in the brain.



# Fight, Flight, Freeze Response

- Blood rushes to major muscles
- Heart – may feel heart racing
- Lungs – may experience shorter, faster breath
- Limbs – may be shaky, or feel cold or hot

These are physical sensations that we interpret as fear, anger, stress.



# Effects of Adrenaline on Brain Function

- Prefrontal Cortex (controls language and high-order) thinking is most vulnerable to stress hormones
- Stress can cause a decline in prefrontal cortex activities  
(Arnsten 2009)
- Brain scans of humans under stress show diminished activity in the prefrontal cortex
- Humans under stress default to habitual behaviors
  - Activation of habitual/automatic responses
  - De-activation of complex thinking and decision making  
(Yu 2016)



# How Empowerment Self-Defense Shifts Habitual Responses

- Rehearsing poise under stress
- Practice managing adrenaline response
- Intervention Responses become habitual





# Video

[Meg's video & discussion of bystander skill building]



# NOTE: Need slides

- [Patti's slides about somatic healing]

# Exercise

Strong voice & stance

# Exercise

Responding to microaggressions



# Becoming Brave

Next steps for addressing stress responses in prevention & healing



# For more information

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