





Jo Terry
President Chip Terry Fund



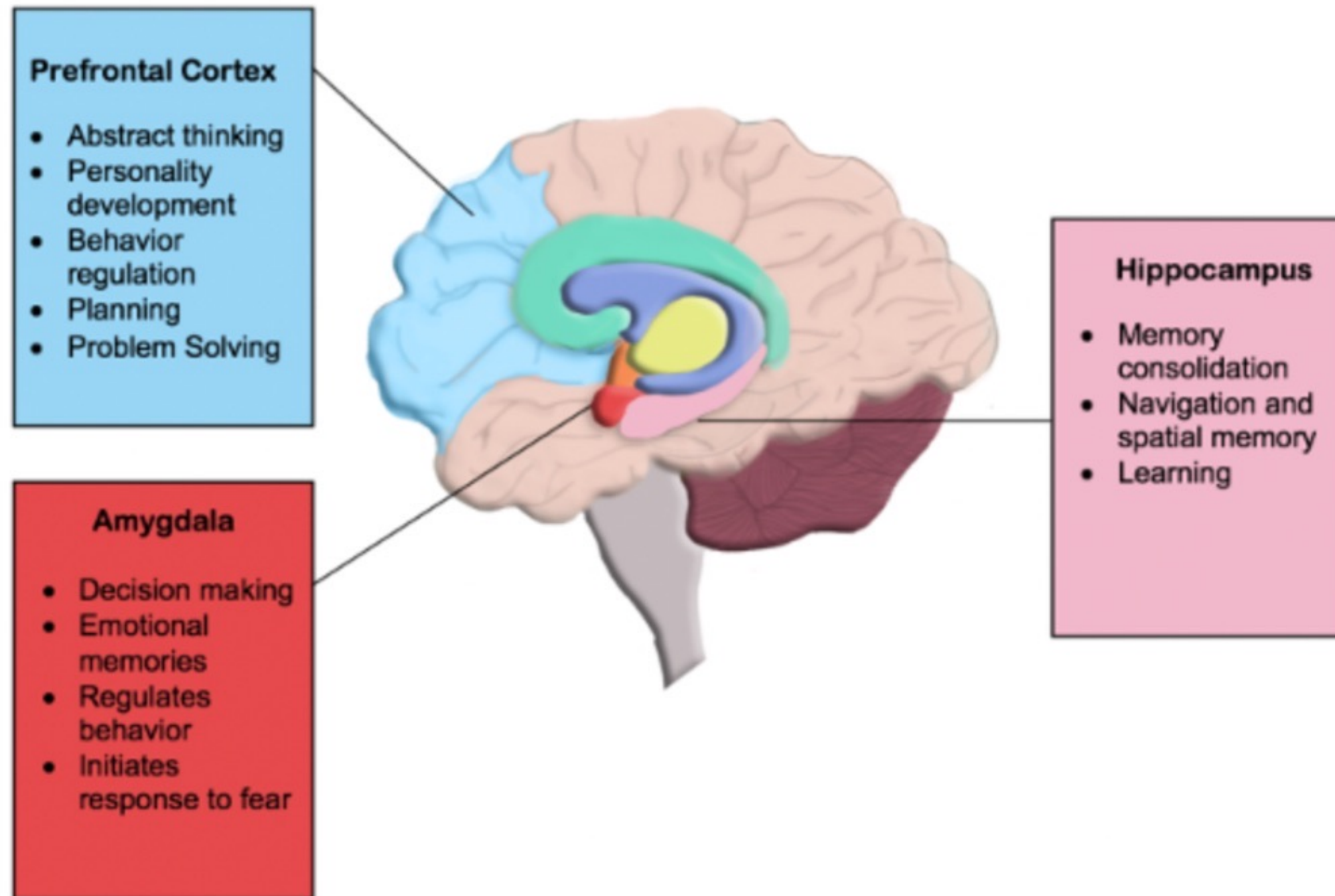


Trauma and its effect on first responders and their family

The Chip Terry Story

Anatomy of the Brain

Three Primary Brain Regions Affected by PTSD and Their Functions



Sympathetic Nervous System

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Fight flee or freeze

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Feed/Breed/Rest

Effects of Stress Hormones

- Weight gain
- Chronic fatigue
- Anxiety
- Depression
- Low libido
- Irritability
- Headaches
- Gut issues
- Compromised immunity
- Heart Disease
- Diabetes
- Cancer

Normal Response to Trauma

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- Threat:
 - Limbic system takes control: reactive mode
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- Threat:
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- Threat Ceases:
 - Parasympathetic nervous system: restorative mode
 - Reduces stress hormones
 - Brain shifts back to normal

PTSD Response to Trauma

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PTSD Response to Trauma

- Threat:
 - Limbic system takes control: reactive mode
 - Non-essential body/mind processes shut down
 - Sympathetic nervous system: fight or flight
- Threat Ceases:
 - Shift from reactive to restorative mode never occurs
 - Holds the individual in a constant reactive state

What is PTSD?

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- Civil War: Soldiers heart; exhaustion
- WWI: Shell shock
- WWII: Combat fatigue; Gross stress reaction

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- WWI: Shell shock
- WWII: Combat fatigue; Gross stress reaction
- Today: Post-traumatic stress disorder



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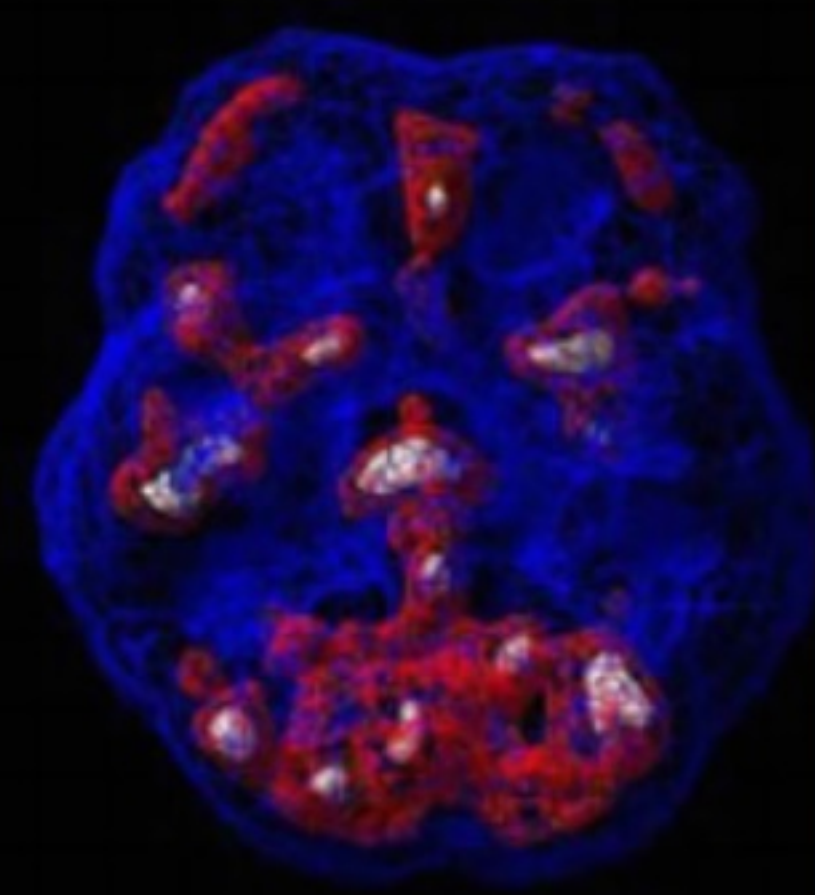
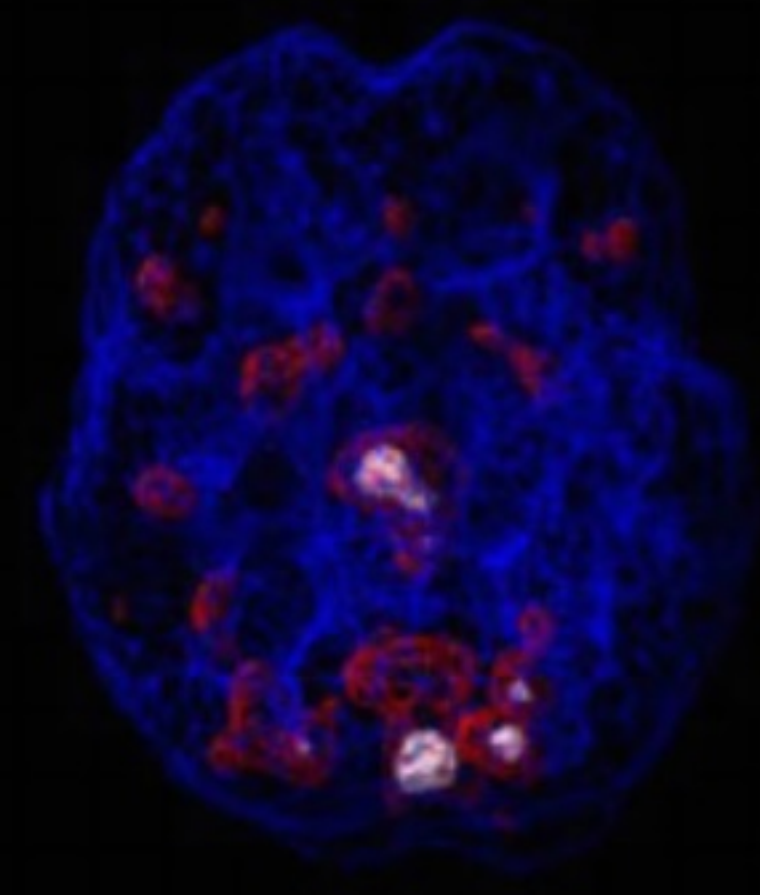
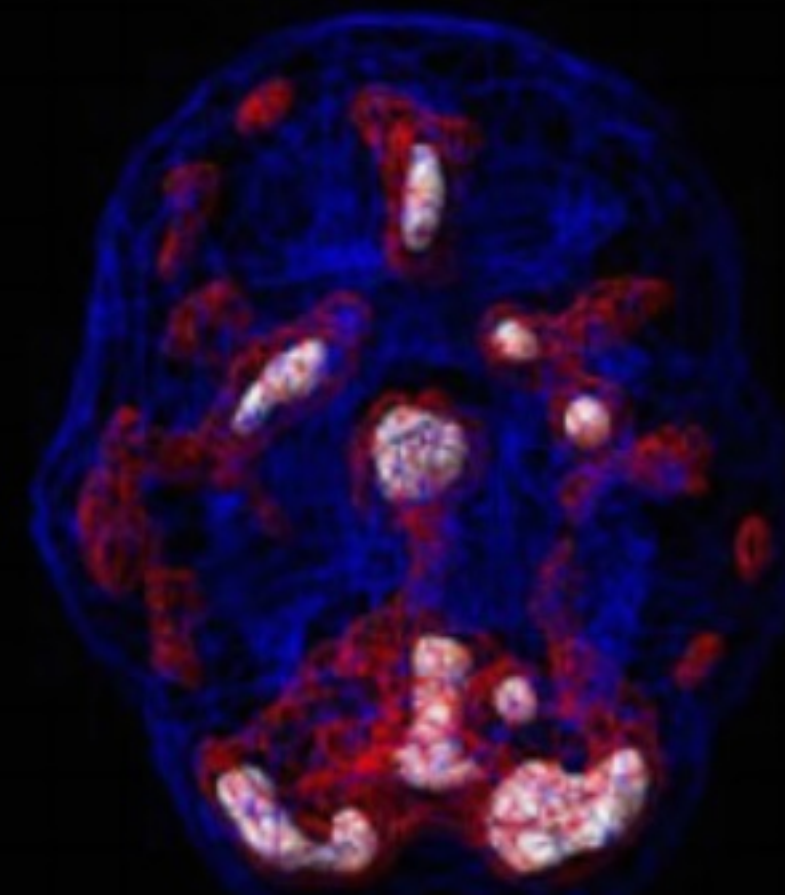
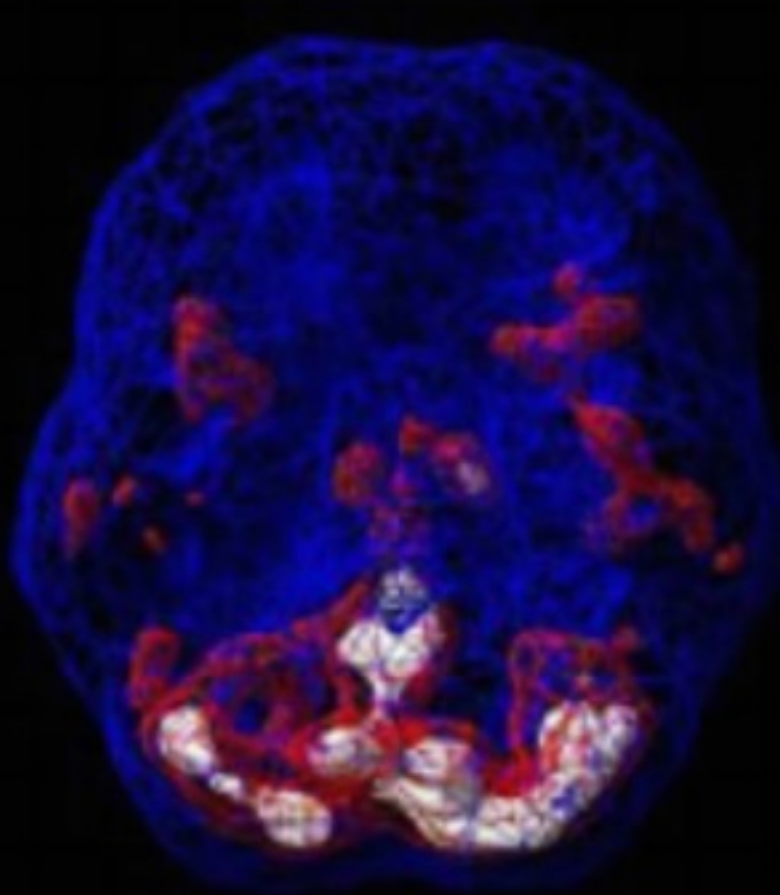
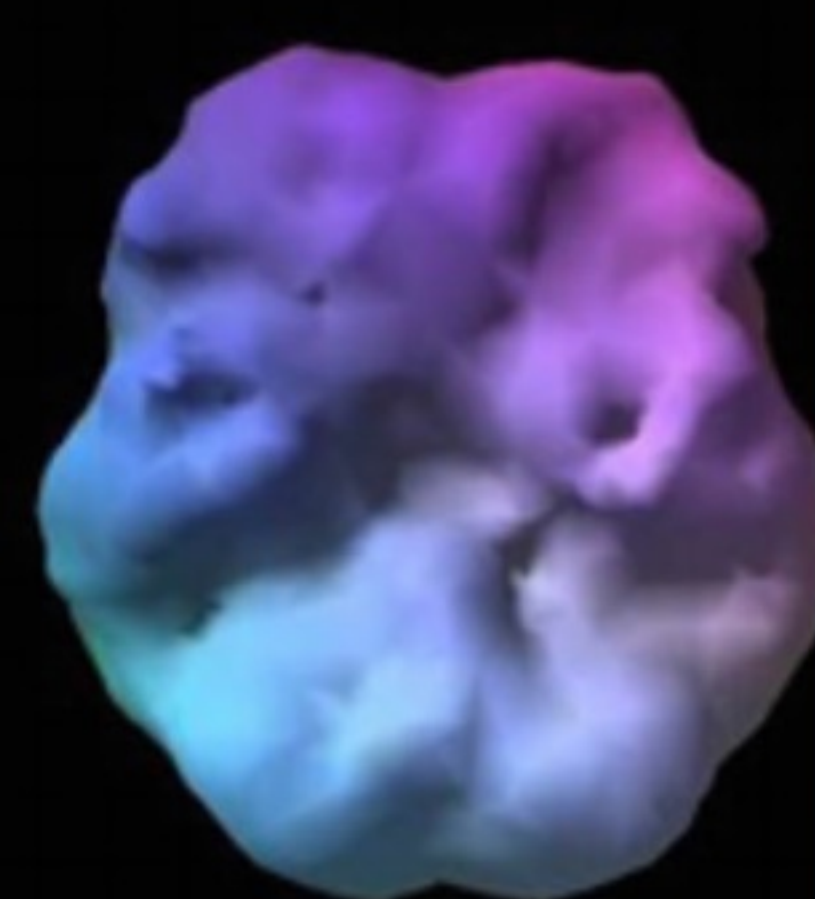
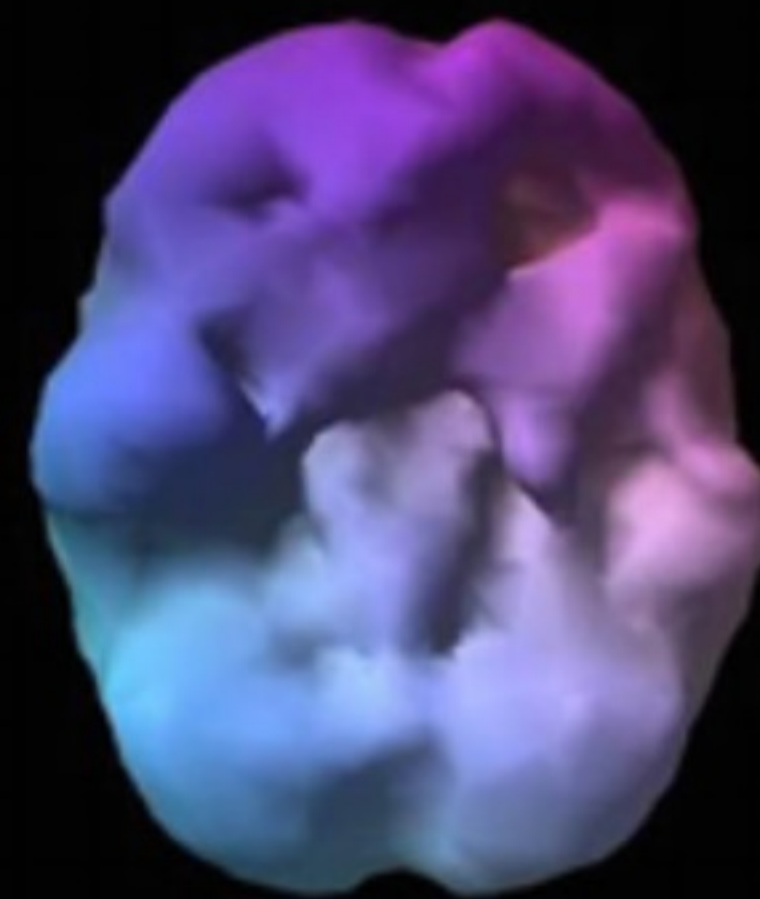
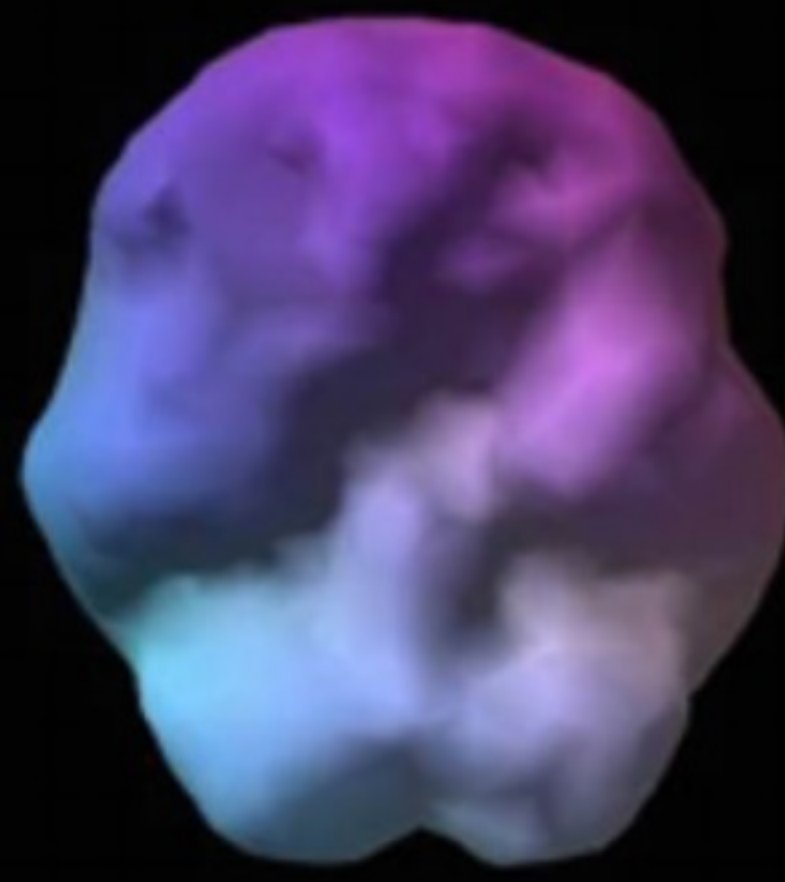
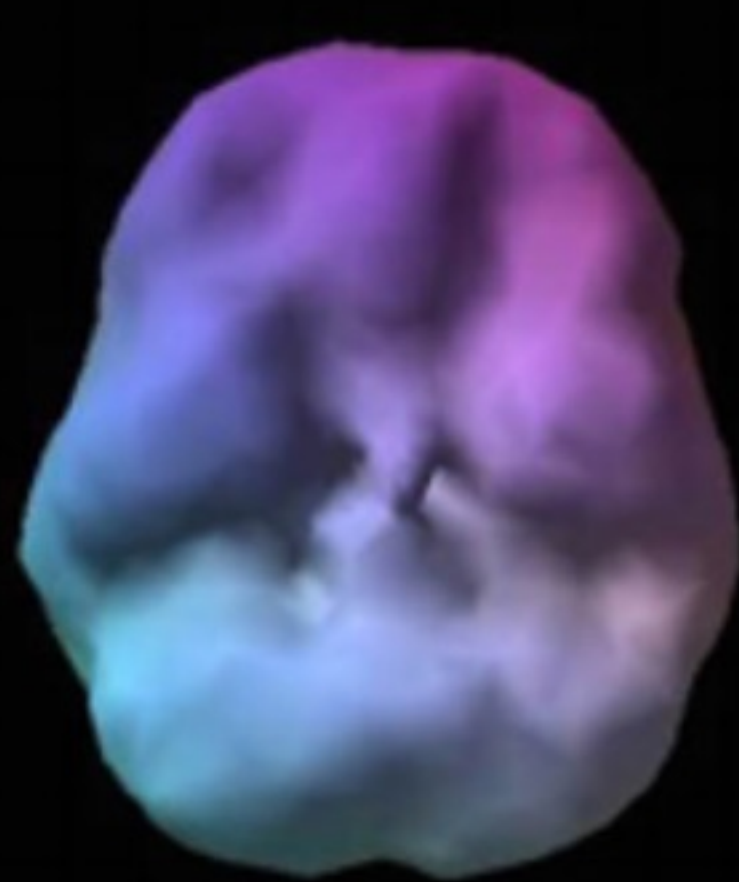
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Results:

- The Thinking Center is under-activated
- The Emotional Center is under-activated
- The Fear Center is OVER-activated

Healthy vs Classic PTSD vs TBI vs Both



Healthy

Classic PTSD

Classic TBI

TBI & PTSD

First Responder Stressors

- Chronic fatigue levels
- Cumulative stress because of repeated exposure to trauma
- Exposure to mass violence and destruction
- Prolonged or failed rescue operations
- Repeated exposure to death, dismembered body parts and human remains, which may include those of fellow first responders.
- Seeing a peer or partner killed or injured in the line of duty
- Witnessing the death of a child

PTSD Symptoms

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- Intrusive memories, dreams, or flashbacks of a specific incident
- Refusing to talk about a traumatic event
- Losing interest in activities
- Avoiding places where a traumatic event occurred
- Feelings of hopelessness, guilt, or low self-worth
- Distancing themselves from others
- Feeling tense or on-edge all the time
- Sleep disturbances

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- Feeling tense or on-edge all the time
- Sleep disturbances
- Paranoia or overwhelming fear
- Irritability or aggressive outbursts
- Inability to focus
- Reduced work performance or missed days
- Increased alcohol or drug consumption
- Unreasonable reactions to average situations
- Risky, dangerous, or self-destructive behavior

PTSD/Suicide Statistics for First Responders

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	FIRE FIGHTERS	POLICE OFFICERS	GENERAL POPULATION
PTSD	14.6 – 22%	35%	6.8%
DEPRESSION	11%	9 – 31%	6.7%
SUICIDAL THOUGHTS	46.8%	7.8%	UNKNOWN

Heyman, Miriam, et al. “The Ruderman White Paper on Mental Health and Suicide of First Responders.” Ruderman Family Foundation, Apr. 2018.

7/24/12



Covington City Commission

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TBNK

Four Categories of PTSD

Intrusive Thoughts	Mood Alterations	Hypervigilance	Avoidance
Unwanted memories	Shame/Blame	Neurotic behavior	Withdrawal
Flashbacks	Argumentative	Irritable or aggressive	Re-routing
Nightmares	Persistent Negativity about self/world	Sleep disturbance	
	Diminished interest in activities/alienated	Self destructive	



Withdrawal



Healing the Brain

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- For an injured brain to heal, you must be in the parasympathetic nervous system
 - Restorative mode
- Flashbacks and nightmares
 - Attempt at healing
- Therapists facilitate the healing process
 - Open the mind to healing

Stress Reduction to Reduce Cortisol

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- Exercise

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- Exercise
- Talking

Stress Reduction to Reduce Cortisol

- Exercise
- Talking
- Meditation

Stress Reduction to Reduce Cortisol

- Exercise
- Talking
- Meditation
- Yoga

Stress Reduction to Reduce Cortisol

- Exercise
- Talking
- Meditation
- Yoga
- Active decompression

Common Evidence Based Treatments

- Cognitive Behavioral Therapy
- Cognitive Processing Therapy
- Prolonged Exposure
- Eye Movement Desensitization and Reprocessing (EMDR)

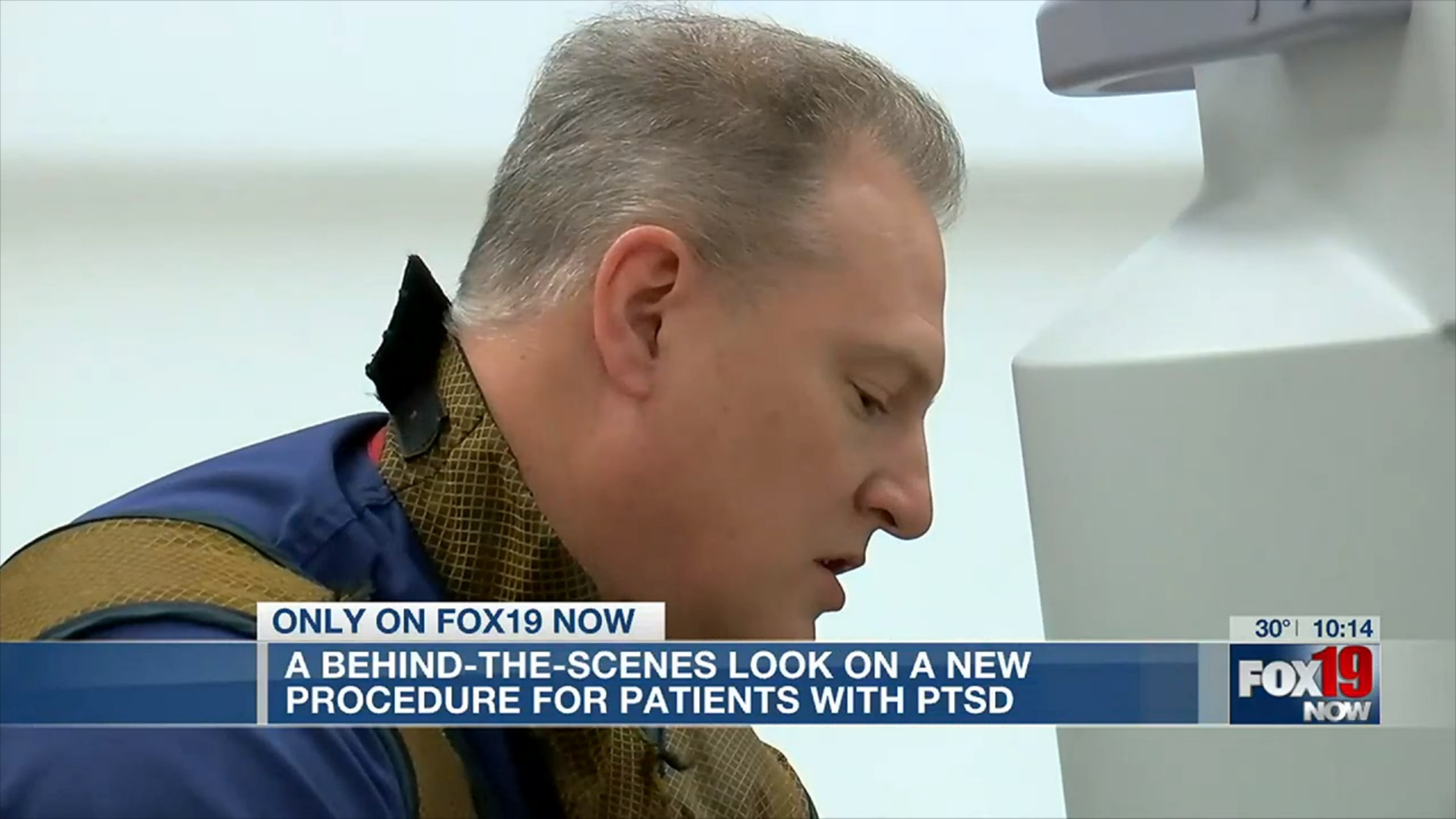
New Methods Being Researched

- Stellate Ganglion Blocks (SGB)
- Neuro Feedback
- Psychedelics- LSD, mushrooms
- Ketamine Injections

SGB: The Neck Jab



- Over 30 individuals
- Must be diagnosed with PTSD by a mental health clinician
- Reduction in anxiety, hypervigilance and anger



ONLY ON FOX19 NOW

**A BEHIND-THE-SCENES LOOK ON A NEW
PROCEDURE FOR PATIENTS WITH PTSD**

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PLC-5

PTSD diagnostic tool developed by the National Center for PTSD

Published in 2013 and widely used in research and clinical settings

20 item questionnaire scored from 0 – 80 (the higher the score the greater the severity)

Scores from 40 – 59 indicate moderate severity

SGB Outcome Study

100 individuals were surveyed

67 responded

Pre-intervention PCL-5 scores average: 54

Individuals were given 1 or 2 SGB over a period of 6 weeks and required to attend therapy with a clinically competent mental health professional

Post-intervention PCL-5 scores were obtained 3 to 12 months after the last block.

Post Intervention PCL-5 score average: 25

- BA in Music from NKU
- MA in Organizational Leadership
- Covington Firefighter from 1986 to 2012
- Adjunct professor at UC Fire Science Program

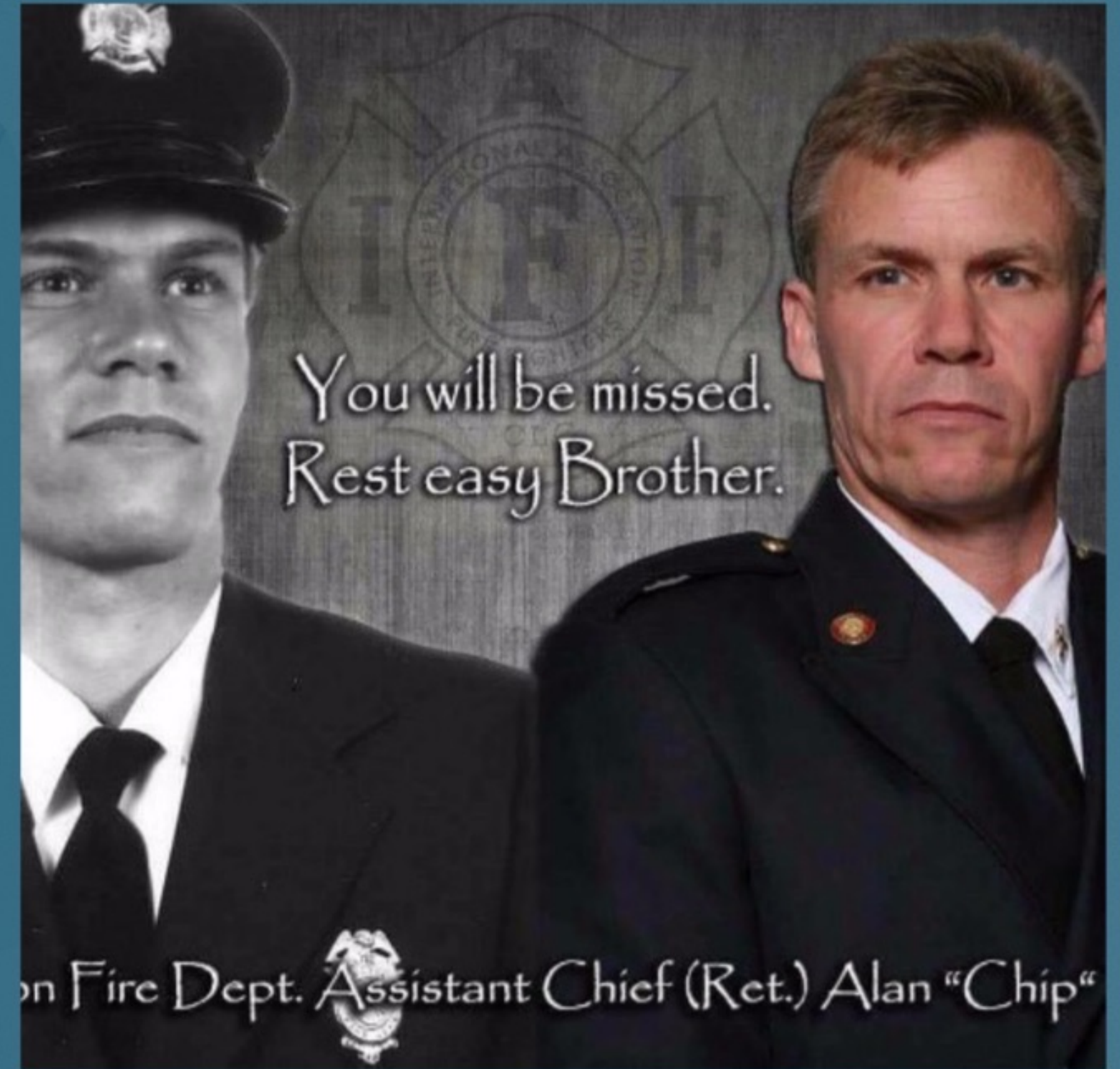






Photo courtesy of Al McLaughlin











The Chip Terry Fund Outreach

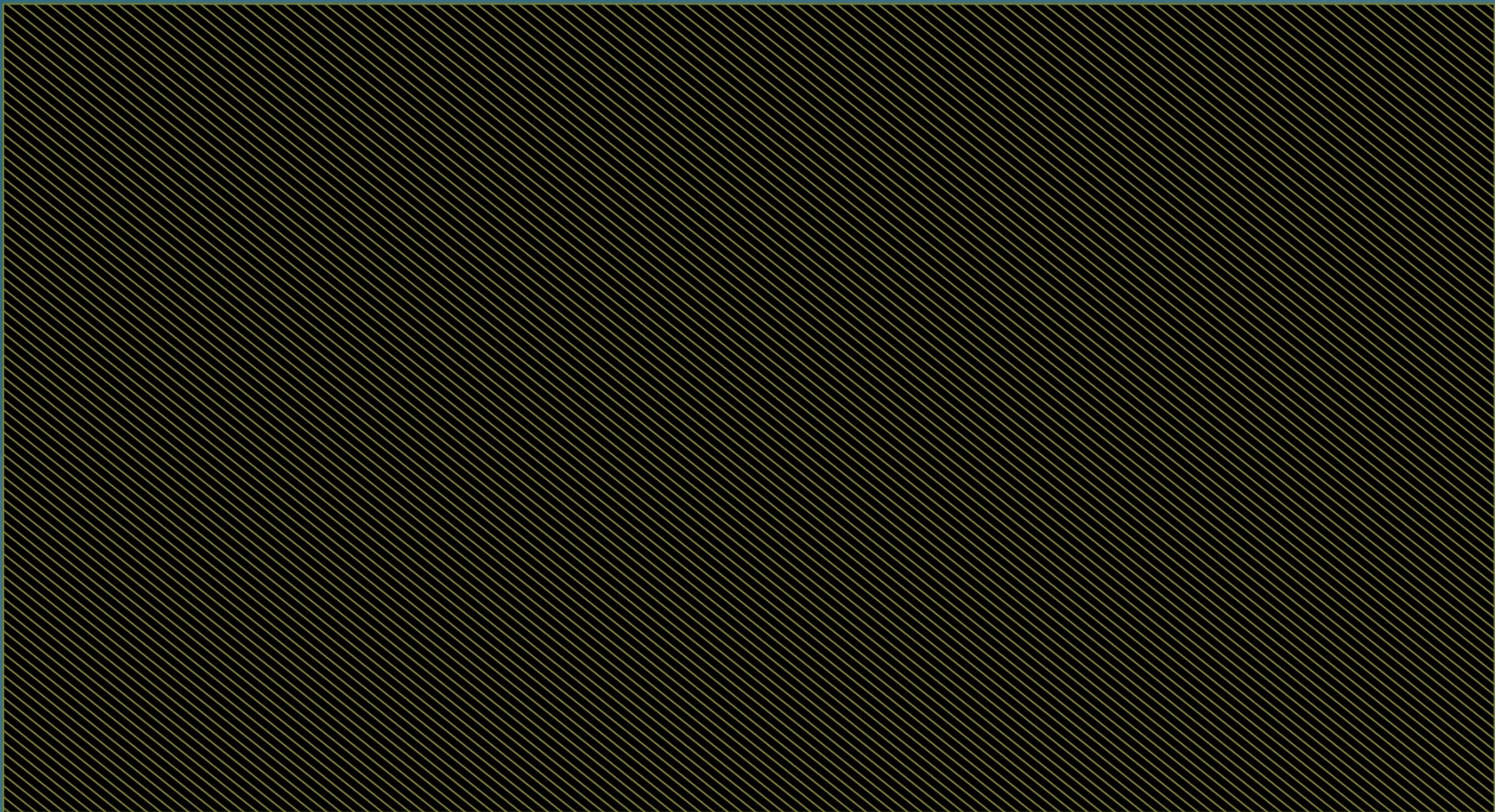
Since 2018: 250 first responders assisted with inpatient and outpatient therapy, SGB, and referrals

Awareness and Prevention seminars

Fundraisers

Resiliency programs





Ky Fire Commission

\$1.25 Million

To participate in the PTSD Reimbursement Program:

- Complete an Application (fillable PDF)
- Complete a Substitute W-9
- Provide signed and dated Medical Diagnosis Certification Form (fillable PDF)

Email forms to Delores Montgomery Collins

Works Cited

- Dill, Jeff. "FF, EMS & CS Suicide Deaths by Year & Type « Firefighter Behavioral Health Alliance." Firefighter Behavioral Health Alliance, [http://www.ffbha.org/ff-ems-suicide-deaths-by-year type/](http://www.ffbha.org/ff-ems-suicide-deaths-by-year-type/).
- FBI National Press Office. "FBI Releases 2016 Statistics for Law Enforcement Officers Killed and Assaulted in the Line of Duty." FBI, 16 Oct. 2017, <https://www.fbi.gov/news/pressrel/press-releases/fbi-releases-2016-statistics-for-law-enforcement-officers-killed-and-assaulted-in-the-line-of-duty>.
- Heyman, Miriam, et al. "The Ruderman White Paper on Mental Health and Suicide of First Responders." Ruderman Family Foundation, Apr. 2018.
- Knapp, Emily. "Signs of PTSD." IAFFRecoveryCenter.com, <https://www.iaffrecoverycenter.com/behavioral-health/ptsd/>.
- Kulbarsh, Pamela. "Police Suicides In 2016." Officer.com, 11 Jan. 2017, <https://www.officer.com/training-careers/article/12293261/police-suicides-in-2016>.
- Rosenthal, Michele. "The Science Behind PTSD Symptoms: How Trauma Changes The Brain." World of Psychology, 27 June 2019, <https://psychcentral.com/blog/the-science-behind-ptsd-symptoms-how-trauma-changes-the-brain/>.

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