

# Substance Abuse, Trauma & Combat Stress

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# Unique War Stressors

The current war (OIF and OEF) poses unique challenges to Soldiers and their families:

- No “front line”, embedded in violence
- Soldiers required to make split second decisions in highly ambiguous environment
- Complex missions (combat, peacekeeping, security, rebuilding, humanitarian missions)
- Long deployments
- Repeated deployments
- Environment is very harsh (e.g. extreme heat, 24 hour operations, constant movement by ground or air, limited down time, crowded uncomfortable living conditions, difficult communications)

# Potential for Combat Stress/Trauma

- Friendly fire incidents
- Receiving small arms fire
- Being attacked or ambushed
- Receiving incoming artillery, rocket,  
• Mortar
- IED/ booby trap exploded nearby
- Shooting or directing fire at the enemy
- Provided aid to the wounded/dead
- “Collateral damage”, especially to children and women
- Handling human remains
- Watching someone die, especially being the person responsible
- “Avoidable” casualties and losses
- Witnessed death/injury of a close friend, fellow soldier, or valued leader
- Killing unarmed or defenseless enemy

# Combat Stress Reactions (1-72 hours)

- Sleep disturbance and nightmares
- Fatigue and exhaustion
- Concentration disturbance
- Somatic complaints
- Subjective anxiety and dysphoria
- Emotional numbing or dissociation
- Appetite changes

Typically respond to rest and reassurance

# Soldier Substance Use Associated With

- Anticipation of intense combat exposure
- Severity and duration of combat
- Transition in aftermath of firefight
- Lack of unit cohesion
- High risk behavior
- Use before committing violence
- Risk of violent victimization from peers
- Severe accidental injury

# Substance Use and Combat Experience

- The Dept. of Defense is concerned about substance abuse and its impact on
  - Fitness for Duty,
  - Violence & Accident Potential,
  - Health & Family Problems.
- Army records show that 9,199 soldiers sought treatment in 2009 after being diagnosed with alcohol problems. This is a 56 percent increase from 2003, when the Iraq war began
- Starting Oct 2001 every unit is now required to have at least four hours of substance abuse awareness training every year.

# BATTLEMIND skills help survival in combat-

but may cause problems if not adapted when home.

- **Buddies (cohesion) vs. Withdrawal**
- **Accountability vs. Controlling**
- **Targeted Aggression vs. Inappropriate Aggression**
- **Tactical Awareness vs. Hypervigilance**
- **Lethally Armed vs. “Locked and Loaded” at home**
- **Emotional Control vs. Anger/Detachment**
- **Mission Operational Security (OPSEC) vs. Secretiveness**
- **Individual Responsibility vs. Guilt**
- **Non-Defensive (combat) Driving vs. Aggressive Driving**
- **Discipline and Ordering vs. Conflict**

# Does Alcohol Use Help or Relieve Symptoms?

- Following the trauma a rebound endorphin withdrawal can contribute to the symptoms of emotional distress observed after a traumatic event as well as an increased desire to drink alcohol.
- People often report using alcohol to relieve their symptoms of anxiety, irritability, and depression.
- Alcohol may relieve these symptoms because drinking compensates for deficiencies in endorphin activity following a traumatic experience.
  - High correlation with PTSD
  - May be used to improve sleep
  - Blocks anxiety and panic attacks
  - Stops intensive thinking and memories
  - Stops terrifying nightmares
  - Induces psychic numbing – making it easier to withdraw
  - Helps to assuage Survivors Guilt
  - Calms anger, irritability, restlessness

# Millennium Cohort Study

Examine the association of combat exposures to new onset or continued alcohol consumption, binge drinking, and alcohol related problems.

Sample – 77,047

- Active Duty – 26,613
- National Guard/Reserve – 21,868

5,510 deployed with combat exposure

5,661 deployed without combat exposure

37,310 did not deploy

Jacobson, et al. (2008). Alcohol use and alcohol-related problems before and after military combat deployment. *JAMA*, 300(6): 663-675

# Millennium Cohort Study

- **Active Duty**

	<b>Baseline</b>	<b>Follow Up</b>	<b>New Onset</b>
Heavy weekly drinking	9.5%	9.2%	6.0%
Binge drinking	57.6%	56.0%	26.6%
Alcohol related problems	11.0%	7.2%	4.8%

- **National Guard/Reservist**

Heavy weekly drinking	9.0%	12.5%	8.8%
Binge drinking	53.6%	53.0%	25.6%
Alcohol related problems	15.2%	11.9%	7.1%

# Millenium Cohort Study

- Reserve and National Guard personnel who deployed and reported combat exposures were significantly more likely to experience new-onset heavy weekly drinking, binge drinking, and alcohol-related problems compared with non-deployed personnel.
- The youngest members of the cohort were at highest risk for all alcohol-related outcomes.

# Alcohol Abuse Problems in Veterans

**Male Vietnam veterans** (National Vietnam Veterans Readjustment Study)

- 39% overall
- 75% of those with PTSD

**Iraq veterans reported for 2009**

- 24 - 35%

# OIF/OEF Veterans

- Rate of PTSD among 120 service members returning from Iraq and Afghanistan
  - 6% had PTSD
  - 27% showed dangerous alcohol use
  - 6% had problems with both PTSD and alcohol use

Erbes et al. (2007). Post-traumatic stress disorder and service utilization in a sample of service members from Iraq and Afghanistan. *Military Medicine*, 172, 359-363.

# OIF/OEF MH Data, 5/2006

Alcohol related incidents have increased for Soldiers returning home

555,478 returnees, 168,421 in VA care

- 56,304 with provisional Mental Health diagnosis
- 27,315 Drug/ alcohol abuse/ dependence
- 25,317 PTSD
- 1,784 ASD
- 17,560 Depression
- 9,157 affective psychoses

# Neurobiological Hypothesis

- Post Traumatic Stress Disorder is the result of neurochemical changes in brain functioning which are relatively permanent and which produce significant behavioral and emotional impairment.
- Survivors of child trauma with adult PTSD were have specific variations in a stress-related genes FKBP5 and STAT5B.
  - \*Polymorphisms of monoamine oxidase A and alcoholism
  - \*Polymorphisms of serotonin transporter and depression
- Whether the mutations occurs early in development or is inherited, the individual is vulnerable to a traumatic response if experiencing a traumatic event.

# Paradigm shift in the understanding of trauma-related substance abuse:

Old model – primary focus on “fear circuit” in brain with fear-related emotions and arousal- Goal: attenuate fear Responses

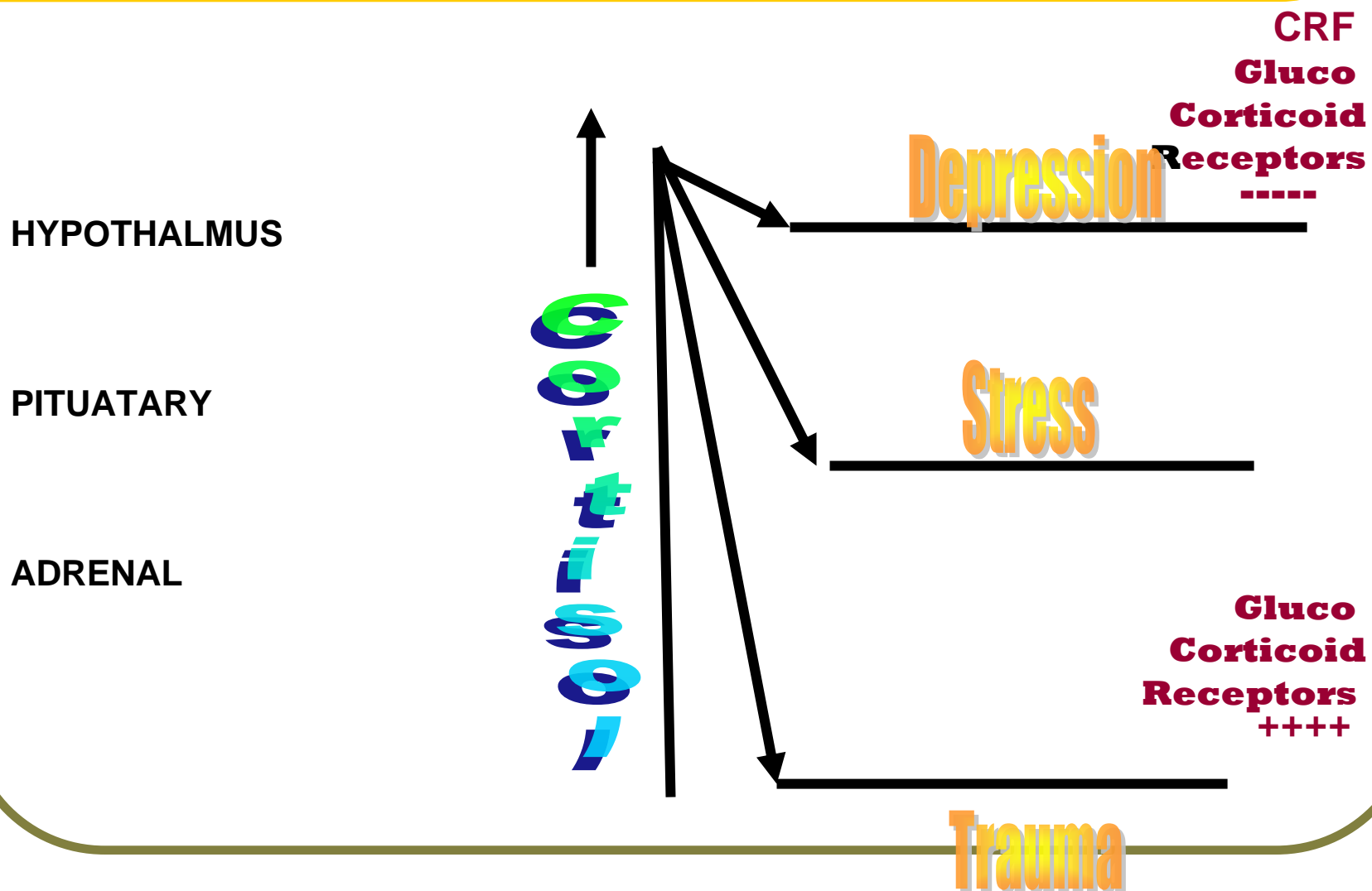
New Model: Acquisition of safety engages the reward centers of the brain along with reduced fear responses – focus on overlap with **reward centers related to substance abuse**

- *Trauma-related substance abuse treatment protocols address securing a sense of safety and protection similar to protocols for children exposed to domestic violence, physical and sexual abuse*

# Psychobiological Syndrome

- Nearly all psychological symptoms of trauma associated with neurological impairments
  - Problems of regulating emotion and arousal
  - Alterations in consciousness and memory
  - Damage to self-concept and identity
  - Disruption in cognitive capacities
  - Hyperactivity and attention problems
  - Relationship problems
  - Alterations in systems of self

# Physiologic Difference Depression, Stress, Or Trauma

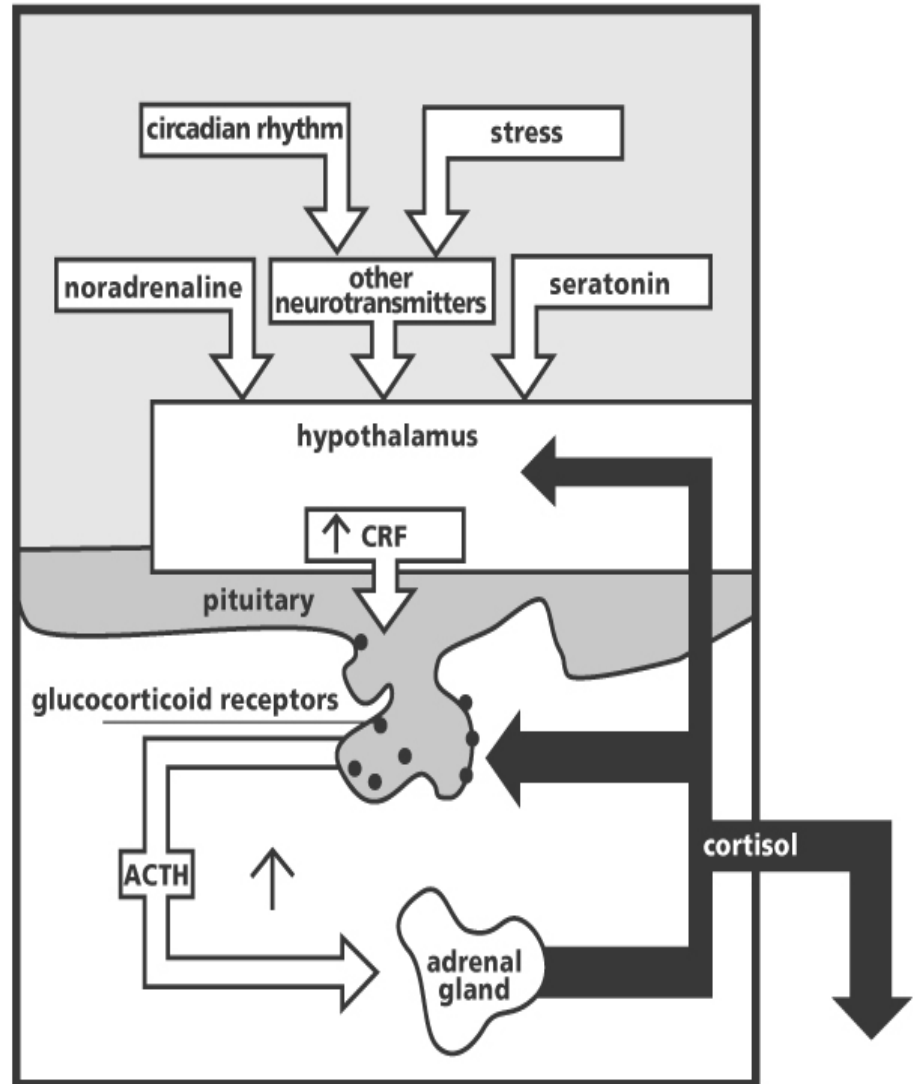


# Arousal has no “brakes”

- STAT5B, a direct inhibitor of GR (glucocorticoid receptor)
- FKBP5, a modulator of glucocorticoid receptor (GR) sensitivity, showed reduced expression
- An opioid antagonist such as naltrexone would block the endorphin response and reduce the desire for alcohol.
- Administering naltrexone as part of the treatment for patients with both PTSD and alcoholism may help break the addictive cycle.  
on in PTSD

# Neurobiological Changes in Response to Traumatic Stress

- Limbic System -- Hippocampus and Amygdala
- Neurotransmitters and Peptides
- Changes in Hormonal System (HPA axis)



# What happens?

- Within minutes of exposure to a traumatic event there is an increase in the level of endorphins in the brain.
- During the time of the trauma, endorphin levels remain elevated and help numb the emotional and physical pain of the trauma.
- After the trauma is over, endorphin levels gradually decrease and this may lead to a period of endorphin withdrawal that can last from hours to days.
- This period of endorphin withdrawal may produce emotional distress and contribute to other symptoms of posttraumatic stress disorder (PTSD).
- Because alcohol use increases endorphin activity, drinking following trauma may be used to compensate this endorphin withdrawal and thus avoid the associated emotional distress.
- The use of alcohol creates a vicious cycle in which more alcohol is needed to prevent subsequent endorphin withdrawal symptoms.
- Chronic exposure to this addictive cycle can lead to alcohol addiction

# Relationship between Neurobiological Changes and PTSD Symptom Clusters

- Re-experiencing
- Avoidance/Numbing
- Hyperarousal
- Smaller Hippocampal Volumes
- Opioid Peptide System and Stress-related Analgesia
- Emotion Processing in the Amygdala and the Arousal System (HPA Axis)

# Substance Use-Chicken or Egg?

- PTSD is a risk factor for substance abuse and addiction.
- Exposure to a traumatic event and posttraumatic stress disorder (PTSD) are more prevalent among persons with substance use disorders than in the general population
- Clinical observations suggest that PTSD patients may use psychoactive substances without a physician's direction to relieve traumatic memories and other symptoms associated with PTSD

# PTSD and Substance Use

In **PTSD Patients**, substance abuse is associated with:

- more severe PTSD
- dissociative symptoms
- borderline personality characteristics

In **Substance Abusers**, trauma is associated with:

- more severe substance use
- higher rates of depression
- more anxiety
- antisocial personality
- suicide attempts

# Substance Abuse & PTSD

- Interferes
  - Affect regulation skills
  - With new learning
  - Habituation to trauma and fear
- Severe Mental Illness, PTSD and Substance abuse interactions escalate severity of problems
- Traditional treatment less effective
- Increase risk of relapse
- Increases risk of re victimization

# Clinical Challenges in the Treatment of Traumatic Stress and Addiction

- Abstinence may not resolve comorbid trauma-related disorders
  - For many patients the PTSD worsens
- Women with PTSD abuse the *most severe substances* and are vulnerable to *relapse for both conditions, as well as repeated trauma*
- Confrontational approaches typical in addictions settings frequently exacerbate mood and anxiety disorders
- 12-Step Models often do not acknowledge the need for pharmacologic interventions
- Treatment programs often do not offer integrated treatments for Substance Use and PTSD
- Treatments for only one disorder, such as Exposure-Based Approaches, are often marked by complications

# Treatment For PTSD

- Decrease Arousal First
  - Irritability
  - Being tense
  - Feeling unsafe (hyper-vigilance)
  - Difficulty concentrating
  - Exaggerated startle response
- Anti-adrenalin – panic, decreased sleep, nightmares, intense anger, irritability, jumpiness
  - Propranolol (Inderal) 10-60mg
  - Prazosin (Minipres) 1-5mg hs.
  - Clonidine (Catapres) 0.2 – 0.6mg daily

# Psychotherapeutic Interventions

- Cognitive Behavioral Therapies
  - Exposure Therapy
  - Stress Inoculation Training
  - Cognitive Processing Therapy
  - Imagery Rescripting
- Seeking Safety: A Psychotherapy for Trauma/PTSD and Substance Abuse
- Acceptance and Commitment Therapy
- Dialectical Behavior Therapy
- Eye Movement Desensitization and Reprocessing
- Motivational Interviewing
- Group Therapy
- Mind-Body Therapies
  - **Mindfulness, Focusing, DBT**
  - **Tapping, EFT, TFT**
  - **Sensory Experiencing (P. Levine)**
  - **Sensorimotor Psychotherapy (Ogden)**

# *Seeking Safety* consists of 25 topics that can be conducted in any order:

- Introduction/Case Management
- Safety
- PTSD: Taking Back Your Power
- When Substances Control You
- Honesty,
- Asking for Help
- Setting Boundaries in Relationships
- Getting Others to Support Your Recovery
- Healthy Relationships, Community Resources
- Compassion
- Creating Meaning
- Discovery
- Integrating the Split Self
- Recovery Thinking
- Taking Good Care of Yourself
- Commitment
- Respecting Your Time
- Coping with Triggers
- Self-Nurturing
- Red and Green Flags
- Detaching from Emotional Pain (Grounding)
- Life Choices
- Termination

# The End



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