TREATING THE WHOLE PERSON: EVIDENCED BASED PRACTICES TO TREAT COMORBIDITIES OF PTSD & TBI

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Learning Objectives

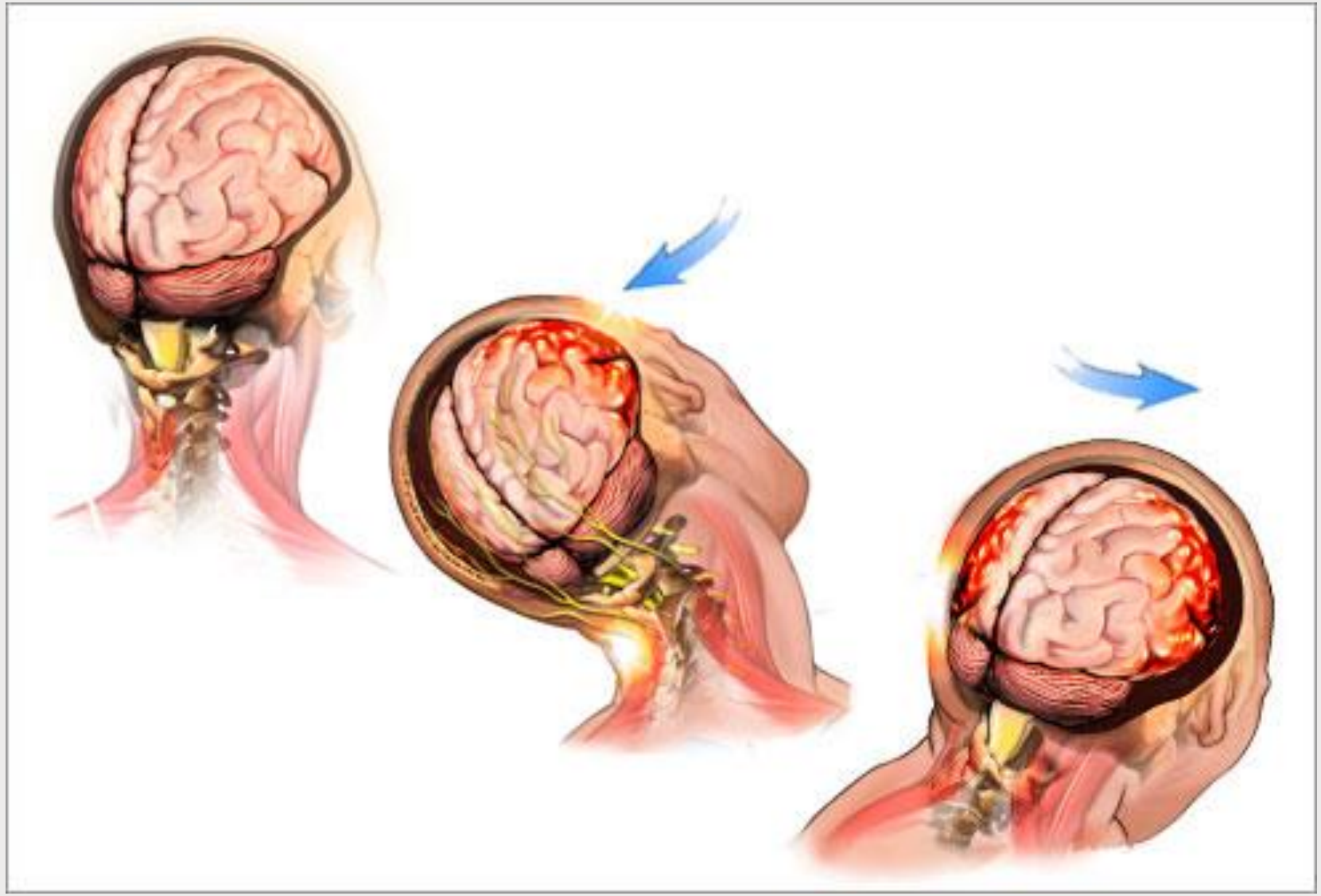
After this presentation, participants will be better able to

1. To identify the different conditions which are comorbid with mTBI and PTSD and understand the brain and neurological functions which are the cause of these comorbidities.

2. To identify the tools to assess and treat the comorbidities of PTSD and mTBI.

3. To identify existing Apps which can be used in treating mTBI, PTSD and the resulting comorbidities.

4. To identify why it is impossible to think of just treating one condition at a time in isolation from the other comorbidities would have maximal effectiveness for individuals who are suffering with them.



A concussion is caused by a jolt that shakes one’s brain back and forth inside your skull. Any hard hit to the head or body -- whether it's from a football tackle or a car accident -- can lead to a concussion. Although a concussion is considered a mild brain injury, it can leave lasting damage if one dosen't rest long enough to let the brain fully heal afterward.

Traumatic Stress or Post Concussive Symptoms

Overlap of PTSD and TBI Symptoms

- Concentration, attention, sleep etc.
- Examine onset: target trauma & TBI may not be the same event
- Look at developmental history prior to deployment to see if there is a change in function
- Identify level of severity of symptoms
- If comorbid with PTSD, treat the PTSD and see what symptoms remain

Causes of Cognitive Deficits Related to TBI

- Brain injury
- Tinnitus-related psychological distress
- Insomnia
- Chronic headaches
- Depression
- PTSD
- Chronic Pain

Impact why problems with thinking, concentration and being able to think clearly

Many factor mimic, mask or exacerbate TBI or Post Concussive symptoms (PCS)

- Brain injury
- Vestibular injury
- Tinnitus-Related Psychological Distress
- Chronic Bodily Pain or Headaches
- Insomnia /Sleep Disturbance
- PTSD
- Anxiety/Stress/Somatic Preoccupation
- Life Stress

All cause symptoms similar to Post Concussive Symptoms

Typical Recovery Times from TBI

Athletes: 1-28 days

Civilians: 1 week to 6 months

Service members coming out of combat: can be longer

Risk Factors for Long-Term Symptoms and Problems

Biological

- Genetics
- Injury severity
- Prior brain injury

Psychological

- Past mental health problems
- Resiliency
- Current traumatic stress and/or depression

Social/Environmental

- Life stress and problems with employment
- Litigation/Disability/Compensation issues

Post concussive Symptoms

- Headaches
- Fatigue
- Noise Sensitivity
- Problems Concentrating
- Problems with Memory
- Sleep Disturbances
- Depression-has similar symptoms to PCS

Treatment Recommendations for Rehabilitation of Vets/Civilian with TBI

Focused, Evidence-Supported Treatment for Specific Symptoms & Problems

- Medications
- Physical Therapy
- Vestibular Rehabilitation
- Exercise
- Psychological treatment

Psychological Treatments for 1-2 year post Injury

- CBT especially if chronic depressed
- Self-management
- Behavioral Activation
- Stress Management
- Acceptance & Commitment Therapy

Exercise for individuals who have long term TBI Symptoms

Exercise as a component of a treatment Plan for patients with TBI

- Facilitates molecular markers of neuroplasticity & promotes neurogenesis healthy & injured brains
- Associated with changes in neurotransmitter systems associated with depression & anxiety
- Effective treatment or adjunctive treatment for mild forms of anxiety & depression
- Associated with reduced pain and disability in patients with chronic low back pain
- Regular long-term aerobic exercise reduces migraine frequency, severity & duration

Goal for Patients with Complex Comorbidities with mTBI to Improve Functioning

- Reduce Sleep Disturbance
- Lessen Stress & Anxiety Symptoms
- Lessen Depressive Symptoms
- Deconditioning from pattern of responses to Triggers
- Reduction of Headaches
- Reduction of Bodily Pain

Treat what you can treat!

What has Happened to our Vets?

Let’s look at CASE STUDY

Corporal Buchanan is a 22-year-old USMC CBRN Defense Specialist (5711) who was a gunner in Military All-Terrain Vehicle when it struck a 40-lb Improvised Explosive Device. Buchanan lost consciousness for 5 seconds & experienced 15 seconds of post-traumatic amnesia. He was diagnosed with a concussion Symptoms: 5/10 headache, confusion, dizziness & nausea

Buchanan was given 24 hours of mandatory recovery (rest) & acetaminophen for headache. He entered stage one (rest) for 24 additional hours, then advanced through the following stages of the progressive return to activity under clinical recommendation:

- Stage two: Light routine activity
- Stage three: Light occupation-oriented activity
- Stage four: Moderate activity
- Stage five: Intensive activity

After 5 days, Buchanan presented as follows:

- All symptoms had resolved, except for an ongoing difficulty with sleep which he minimized & denied on the Neurobehavioral Symptom Inventory (NSI)
- Automated Neuropsychological Assessment Metrics scores returned to baseline
- Passed exertional testing

Returned to unrestricted duty

Buchanan's tour ended 4 months after his injury & he returned home

Upon his return home, Buchanan reported to his primary care manager (PCM) with the following complaints:

- 4 months of difficulty sleeping (2 hours or more to fall asleep & difficulty staying asleep)
- Using daily energy drinks to stay awake
- Difficulty remembering information
- Difficulty paying attention to conversations
- Increased irritability

The PCM completed a clinical sleep interview, physical examination & administered a self-report measure

Clinical Sleep Interview

- Difficulty falling asleep, daytime fatigue & nightmares
- No complaints of snoring or gasping for air during sleep
- Reports excessive daily caffeine intake (600-700 mg/day)
- No sleep-specific red flags

Physical Examination

- Body mass index (BMI) & blood pressure were within normal limits

Self-report Measure

- Insomnia Severity Index (ISI) revealed a score of 17

The PCM diagnosed Buchanan with chronic insomnia and instructed him in the following:

- Stimulus control; Sleep hygiene Progressive muscle relaxation training

After 2 weeks of treatment & weekly PCM appointments, Buchanan reported only mild improvement

The PCM referred him for Cognitive Behavioral Therapy for Insomnia (CBT-I)

Buchanan reported only mild improvement after 4 weeks of full CBT-I

The PCM administered the Insomnia Severity Index (ISI) with a score of 14 (3 point improvement)

The PCM referred Buchanan to a sleep medicine specialist

Further diagnostic workup confirmed chronic insomnia

Recommended treatment included:

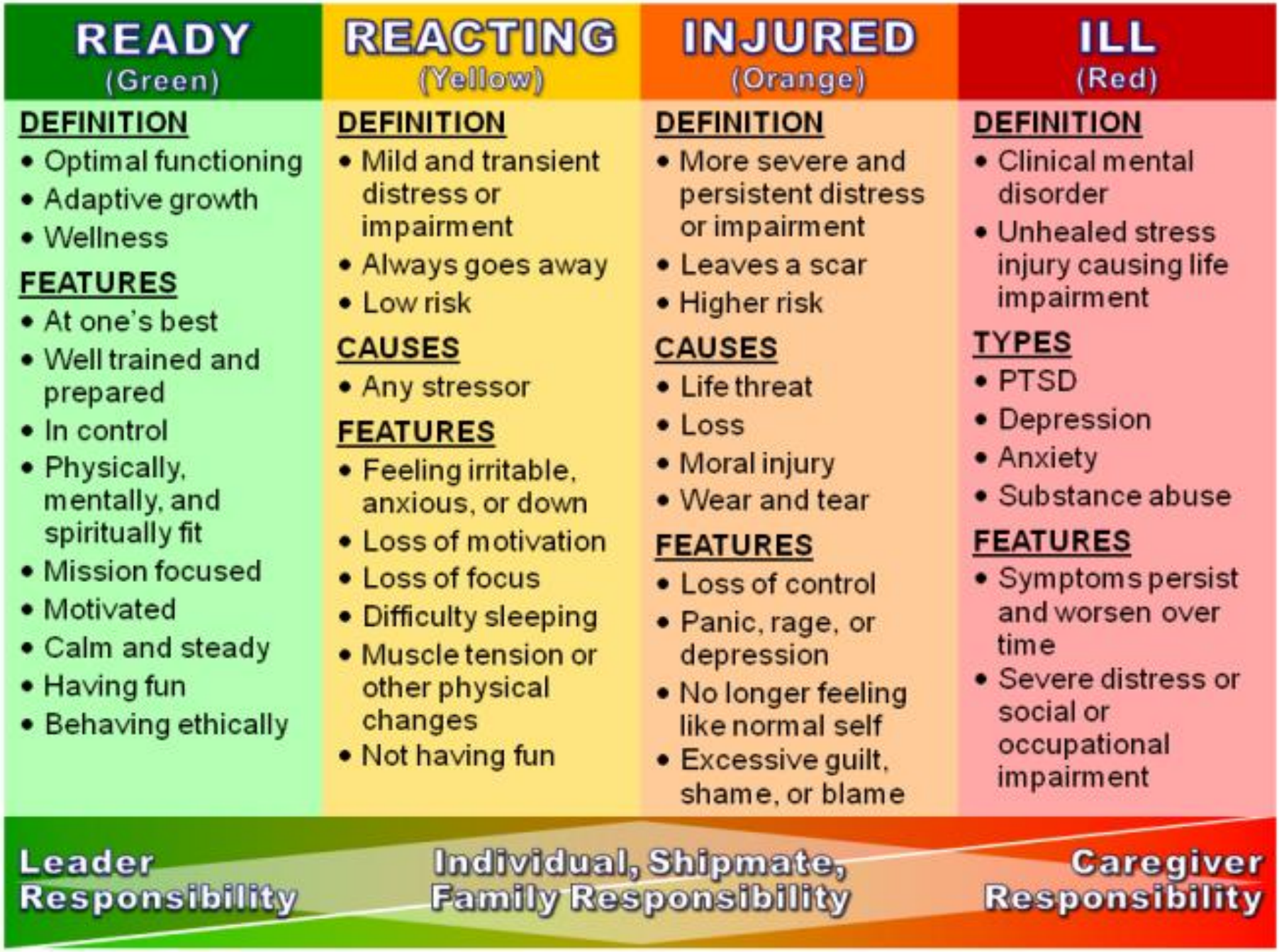
- Acupuncture & Behavioral health evaluation & treatment

After 3 weeks, Buchanan reported the following improvements:

- Decreased daytime fatigue
- Significantly improved ability to fall asleep
- Decreased frequency of nightmares
- Improved ability to pay attention and remember information
- Decreased irritability

Not just Mental Health - Physical Injuries

- Orthopedic injuries: chronic pain due to joint and muscular-skeletal injuries in back, knees, shoulders, wrists
- Hearing problems: hearing loss, ringing in ears
- Respiratory illnesses: sand, dust
- Skin conditions: rashes, bacterial infections
- Major trauma injuries: gunshot wounds, shrapnel, traumatic brain injuries


READY
(Green)
DEFINITION
• Optimal functioning
• Adaptive growth
• Wellness
FEATURES
• At one's best
• Well trained and prepared
• In control
• Physically, mentally, and spiritually fit
• Mission focused
• Motivated
• Calm and steady
• Having fun
• Behaving ethically
REACTING
(Yellow)
DEFINITION
• Mild and transient distress or impairment
• Always goes away
• Low risk
CAUSES
• Any stressor
FEATURES
• Feeling irritable, anxious, or down
• Loss of motivation
• Loss of focus
• Difficulty sleeping
• Muscle tension or other physical changes
• Not having fun
INJURED
(Orange)
DEFINITION
• More severe and persistent distress or impairment
• Leaves a scar
• Higher risk
CAUSES
• Life threat
• Loss
• Moral injury
• Wear and tear
FEATURES
• Loss of control
• Panic, rage, or depression
• No longer feeling like normal self
• Excessive guilt, shame, or blame
ILL
(Red)
DEFINITION
• Clinical mental disorder
• Unhealed stress injury causing life impairment
TYPES
• PTSD
• Depression
• Anxiety
• Substance abuse
FEATURES
• Symptoms persist and worsen over time
• Severe distress or social or occupational impairment
Leader Responsibility
Individual, Shipmate, Family Responsibility
Caregiver Responsibility

What's Keeping the New Veterans from Seeking Care?

Practical Concerns/Logistical Barrier

- I don't know where to get help
- I don't have adequate transportation
- It's difficult to schedule an appointment
- It's difficult getting time off work
- Costs too much money
- I don't trust mental health professionals

(Hoge et al. 2004, NEJM; Ouimette et al., 2011)

Impact of Stigma in Seeking Help

Stigma (active duty)

- It would harm my career
- Members of my unit might have less confidence in me
- Unit leadership might treat me differently
- Leaders would blame me for the problem

Stigma (veterans & active duty)

- I would be seen as weak; I would see myself as weak
- It would be too embarrassing
- I don't want other people to know about my problems
- I don't like to get emotional about things

Disabilities by Body System & Gender for Veterans Receiving Compensation at End of Fiscal in 2012

Body System	Number of Disabilities		
	Male	Female	Total
Cardiovascular System	106,722	15,154	**122,445**
Dental and Oral Conditions	16,174	5,029	**21,323**
Digestive System	153,456	26,571	**180,815**
Endocrine System	18,718	6,288	**25,162**
Genitourinary System	72,884	7,189	**80,421**
Gynecological System	705	18,107	**19,002**
Hemic and Lymphatic Systems	4,086	2,791	**6,913**
Impairment of Auditory Acuity	344,160	25,575	**370,945**
Infectious Diseases, Immune Disorders and Nutritional Deficiencies	2,558	803	**3,374**
Mental Disorders	215,039	36,541	**252,184**
Musculoskeletal System	1,463,379	232,887	**1,703,422**
Neurological Conditions and Convulsive Disorders	244,652	51,855	**297,611**
Organs of Special Sense	36,746	6,705	**43,674**
Respiratory System	186,764	32,283	**220,018**
Skin	374,138	66,735	**442,938**
[1]Total	**3,240,181**	**534,513**	**3,790,247**

What is TBI?

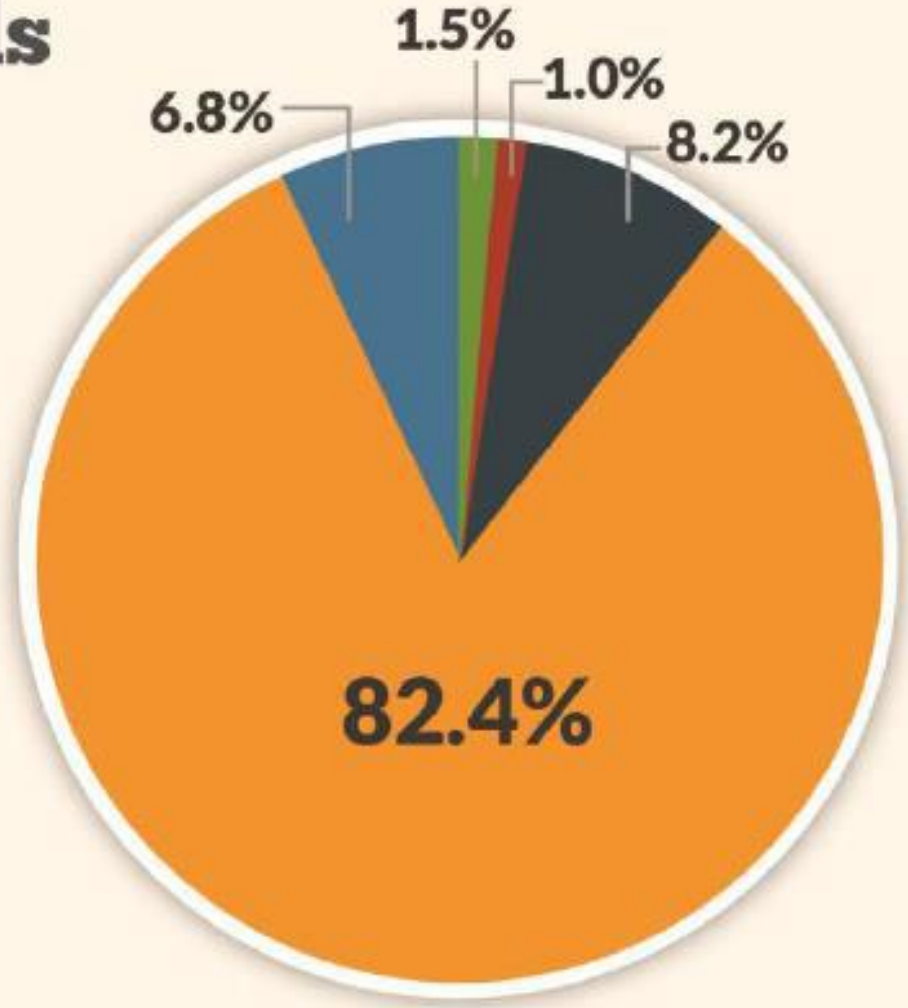
- Effects of a typical IED in Afghanistan on Military ATV
- Weapon of choice by the enemy
- IEDs are a daily threat to all ground forces.
- If someone has been involved in a blast (within 100 meters) and has not been assessed there is a possibility of mTBI
- Majority of mTBI sustained by service members occur during daily life or military training, not during deployment and while deployed ie: playing sports

DoD Numbers for Traumatic Brain Injury

Worldwide – Totals

2000-2014 Q1

Penetrating	4,477
Severe	3,041
Moderate	24,777
Mild	247,904
Not Classifiable	20,508
Total - All Severities	**300,707**



Source: Defense Medical Surveillance System (DMSS), Theater Medical Data Store (TMDS) provided by the Armed Forces Health Surveillance Center (AFHSC)

Prepared by the Defense and Veterans Brain Injury Center (DVBIC)

Percentages may not add up to 100% due to rounding

2000-2014 Q1, as of May 7, 2014

The Brain Is the Organ of Coping

Coping: “the person’s constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person’s resources.” (Lazarus & Folkman, 1984)

Coping (whether adaptive or maladaptive) depends on intact higher cortical functioning

- Cognitive appraisal (thinking)
- Enacting a coping strategy (doing)

The performance limits of the brain, therefore, define the limits of adaptive coping

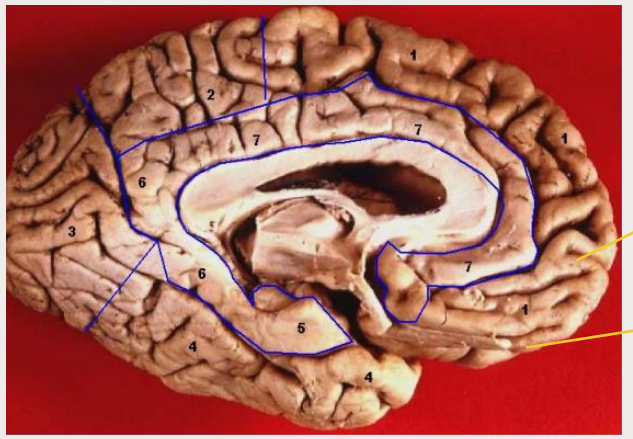
Lets Look at Reason for comorbidities with TBI

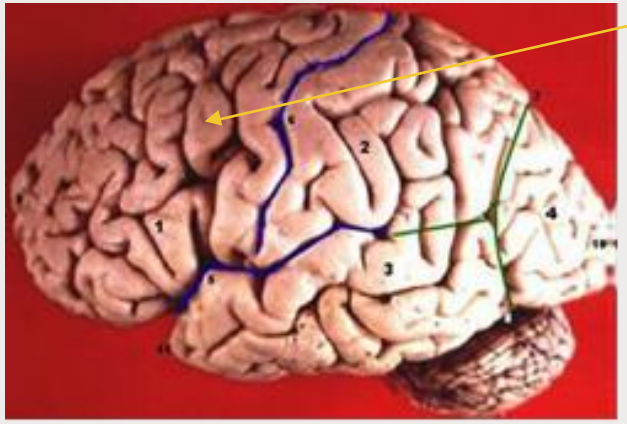
The structure and functioning of the CNS set limits on capacities for coping and all other behavior

- TBI
- Mental disorders are the result of losses of integrity in the CNS rather than maladaptive coping choices
- PTSD
- Major depressive disorder
- Generalized anxiety disorder
- Psychotic disorders

To think and teach otherwise is to blame our patients for their own suffering

Regions of Cortex Involved in Self Regulation





Medial PFC

- Volitional control of emotion

Orbitofrontal PFC

- Decision making

Dorsolateral PFC

- Volitional control of attention

Insula (not visible)

- Volitional control of arousal

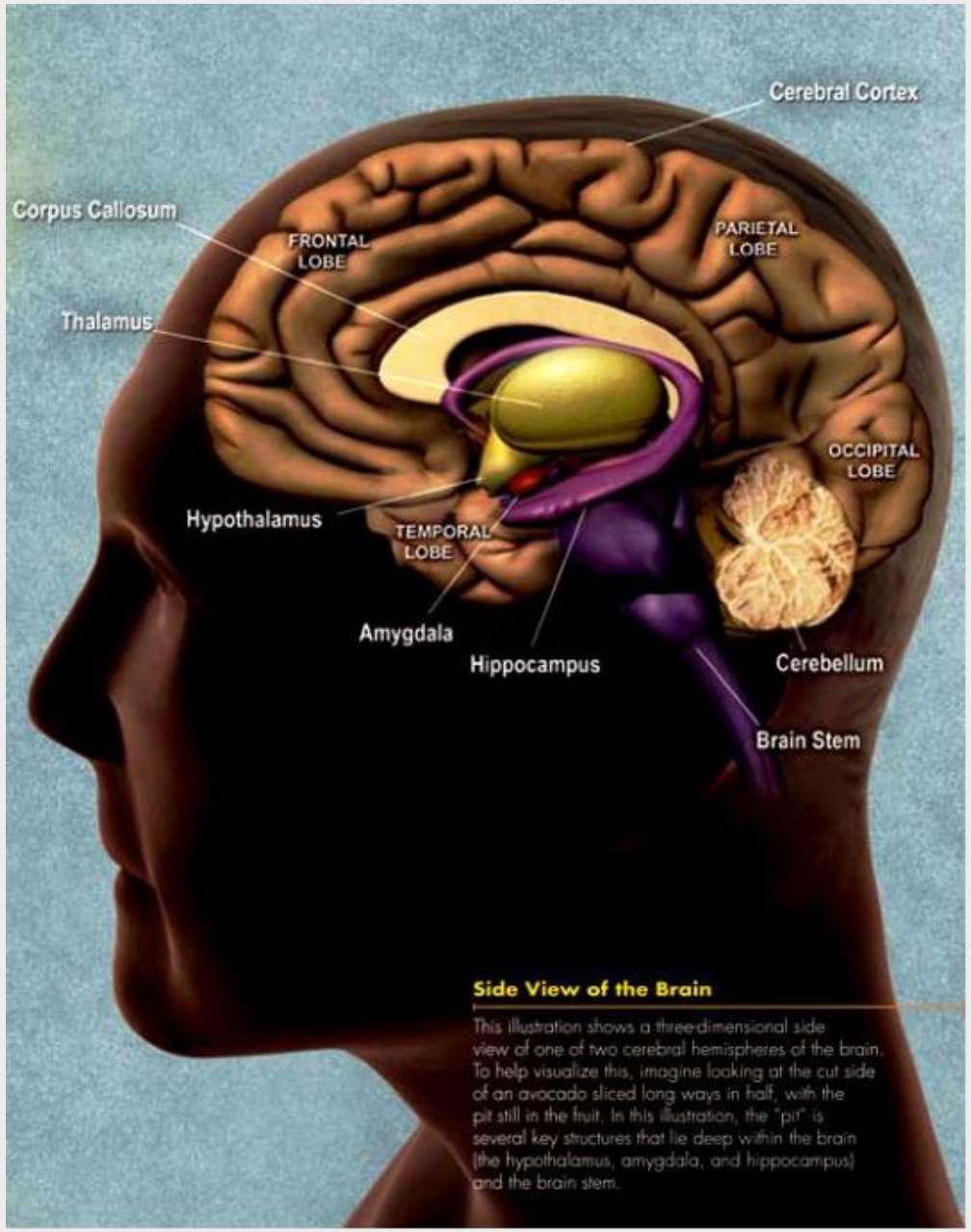
Together, these regions of prefrontal and insular cortex make possible inhibition and control of emotions, thoughts, behaviors, and physiological arousal

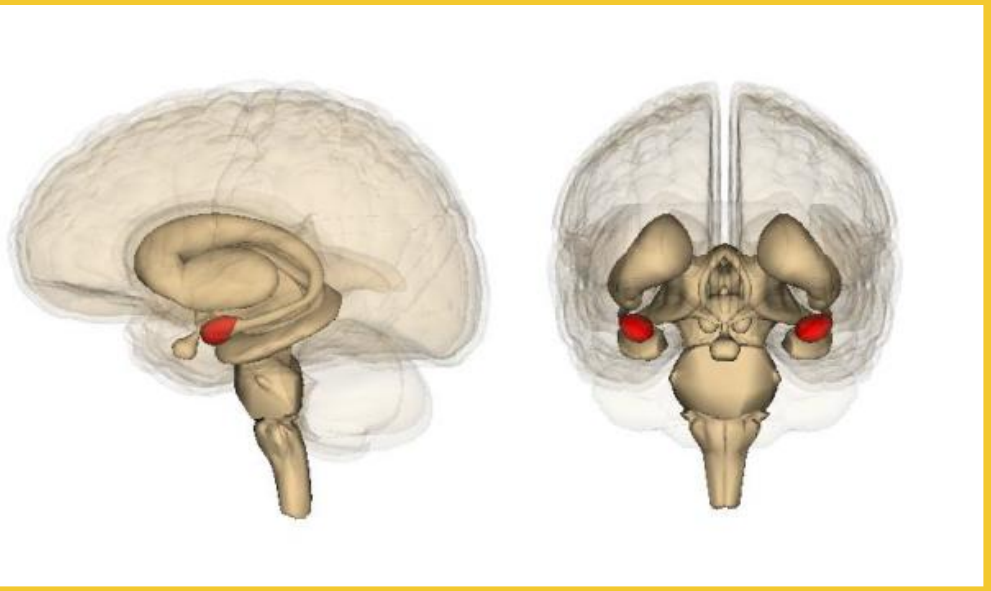
Hippocampus:

Gray-Matter Partner to Prefrontal Cortex (PFC)

FUNCTIONS

- Declarative memory: laying down and consolidation of recallable memory
- Inhibition (along with PFC)
- Fear extinction
- Spatial mapping (GPS)
- May also be crucial for constructing a coherent mental image, whether from current perception or memory



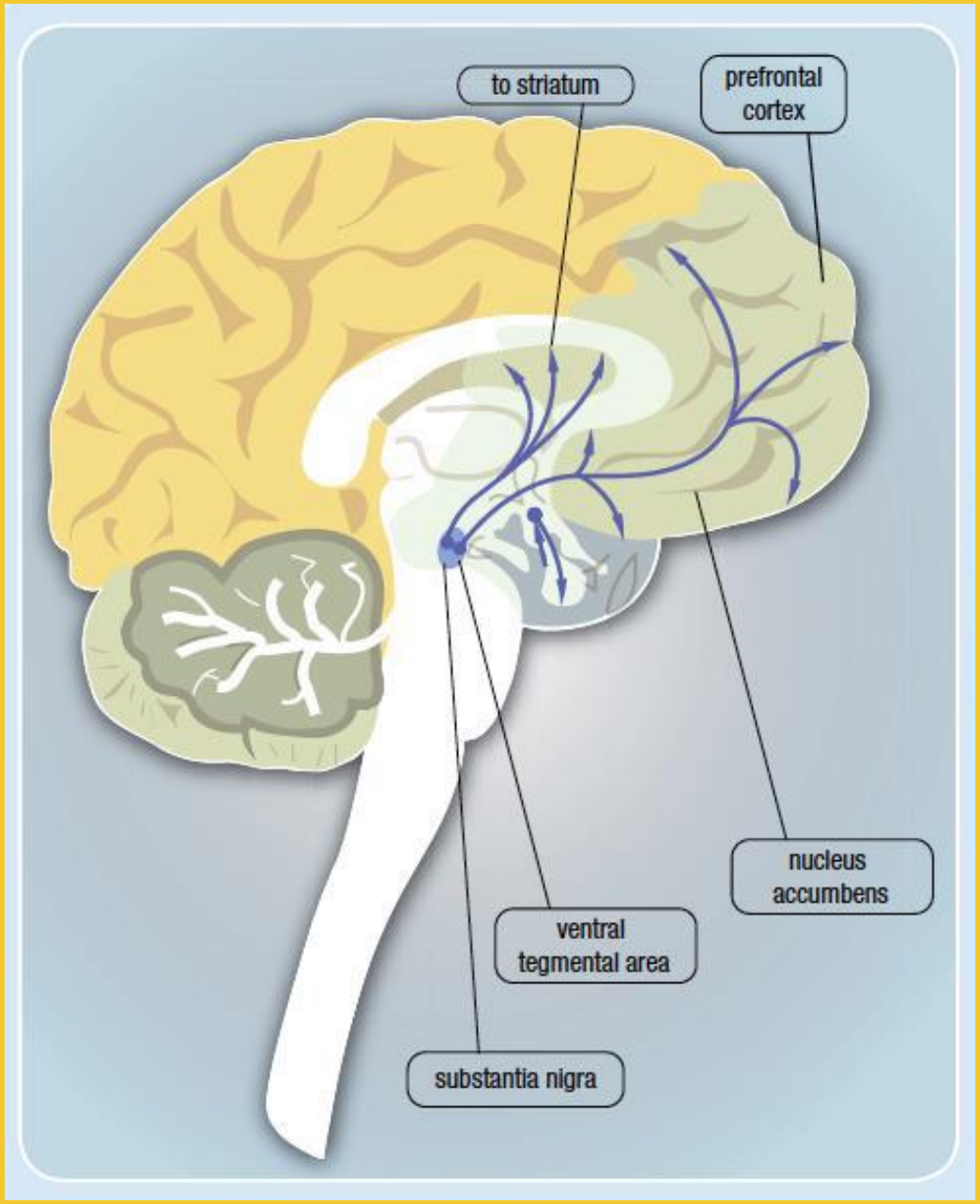


Amygdala:

Important Target for Control by PFC and Hippocampus

FUNCTIONS

- Puts “emotional stamp” on memories
- Fear, anger, (etc.?)
- Threat detector
- Social recognition
- Fear conditioning
- Appetite conditioning?



Nucleus Accumbens:

Another Important Target for Control By PFC and Hippocampus

FUNCTIONS

- Reward, pleasure
- Well-being
- Motivation
- Focus, attention
- Goal-directed behavior
- Addiction, craving

A Few Molecular Modulators of Stress

- Corticotropin-releasing factor (CRF)
- Cortisol
- Brain-derived neurotrophic factor (BDNF) and other neurotropins
- Glutamate (Glu) acting at N-methyl-d-aspartate (NMDA) receptors

Corticotropine-releasing Factor (CRF), Cortisol, and brain-derived neurotrophic factor (BDNF)

CRF is the master stress modulator (“on” switch for stress)

CRF is both:

- A hormone released in the hypothalamus triggering release of corticosteroids like cortisol from adrenal cortex
- A neurotransmitter used by a diffuse network of neurons in the brain

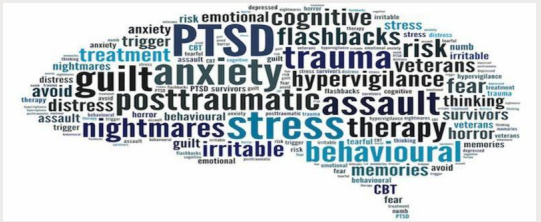
Both CRF and cortisol have biphasic activity in the brain:

- At low to moderate levels, they improve performance, learning, and well-being
- At high or sustained levels, they degrade performance, learning, and well-being

Cortisol interacts with BDNF to stimulate growth of new dendrites, synapses, and entire neurons, but in different brain systems depending on stress level

Brain systems	Low–Moderate Stress	Extreme Stress
PFC & Hippocampus	• ↑ in density of dendrites and synapses • ↑ in numbers of neurons	• ↓ in density of dendrites and synapses • ↓ in numbers of neurons
Amygdala	• ↓ in density of dendrites and synapses • ↓ in numbers of neurons	• ↑ in density of dendrites and synapses • ↑ in numbers of neurons
Nucleus accumbens	• ↑ in dopamine release • ↑ in well-being • ↑ in motivation, problem-solving (active coping)	• ↓ in dopamine release • ↓ in well-being • ↓ in motivation, problem-solving (avoidant coping)

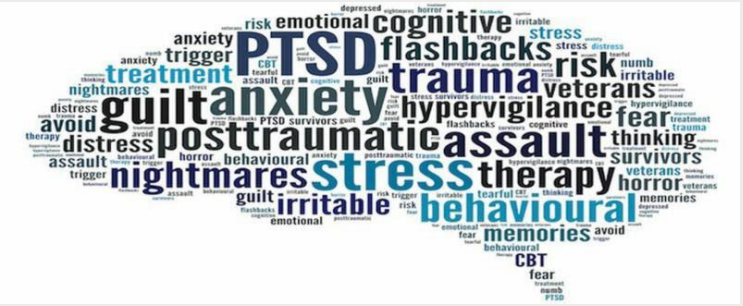
PTSD Criteria



Traumatic experience(s)

- Intrusion
- Avoidance
- Alterations in cognition & mood
- Alterations in arousal
- Functional interference

Checklist for PTSD



Re-experience the event over and over again

- You can't put it out of your mind no matter how hard you try
- You have repeated nightmares about the event
- You have vivid memories, almost like it was happening all over again
- You have a strong reaction when you encounter reminders, such as a car backfiring

Avoid people, places, or feelings that remind you of the event

- You work hard at putting it out of your mind
- You feel numb and detached so you don't have to feel anything
- You avoid people or places that remind you of the event

Feel "keyed up" or on-edge all the time

- You may startle easily
- You may be irritable or angry all the time for no apparent reason
- You are always looking around, hyper-vigilant of your surroundings

Many DSM-5 PTSD Symptoms Reflect Losses of Higher Cortical Functioning

(B) Cluster: Intrusion Symptoms
- Involuntary distressing memories
- Dissociative reactions (flashbacks)

(C) Cluster: Trauma-Related Avoidance
- Avoiding external reminders

(D) Cluster: Alterations in cognitions and mood
- Dissociative amnesia
- Persistent negative emotional states
- Inability to feel positive emotions

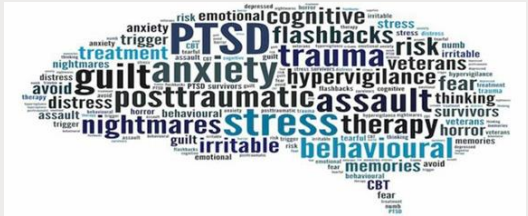
(E) Cluster: Alterations in arousal and reactivity
- Angry outbursts
- Reckless behavior
- Exaggerated startle responses
- Difficulty relaxing or falling asleep

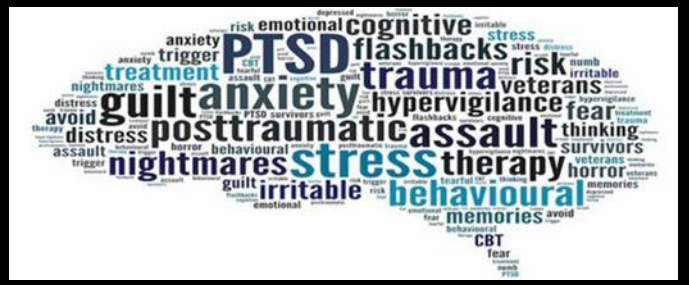
Loss of Authority Over MEMORY

Loss of Authority Over COGNITIONS

Loss of Authority Over EMOTIONS

Loss of Authority Over BEHAVIOR





- Speech and language deficits
- Extreme mood lability / disinhibition
- Impulsivity
- Poor balance
- Dizziness
- Changes in perception and increased sensitivity (vision, hearing, touch)

mTBI

PTSD

- Intrusive memories
- Nightmares
- Reliving the trauma
- Psychological/physiological distress with exposure to cues
- Avoidance of trauma-related thoughts, feelings, reminders, conversations
- Hypervigilance
- Exaggerated startle

- Impaired concentration and decision making
- Learning difficulties
- Memory impairment and confusion
- Inability to recall trauma
- Slower processing speed
- Being "overwhelmed"
- Impulsivity
- Reduced insight
- Rigid thinking
- Amotivation
- Interpersonal conflict
- Social withdrawal / isolation / agoraphobia
- Reduced intimacy / feeling less compassionate or warm towards others
- Impaired work and school performance
- Depressed mood
- Irritability / aggression
- Sleep disturbance
- Anxiety symptoms
- Substance misuse/abuse/dependence
- Guilt
- Lowered frustration tolerance
- Being socially 'inappropriate"
- Fatigue
- Insomnia
- Headaches**
- Cardiovascular, gastrointestinal, musculoskeletal disorders
- Sexual problems
- Noise sensitivity

Symptoms of Depression

Cognitive Problems

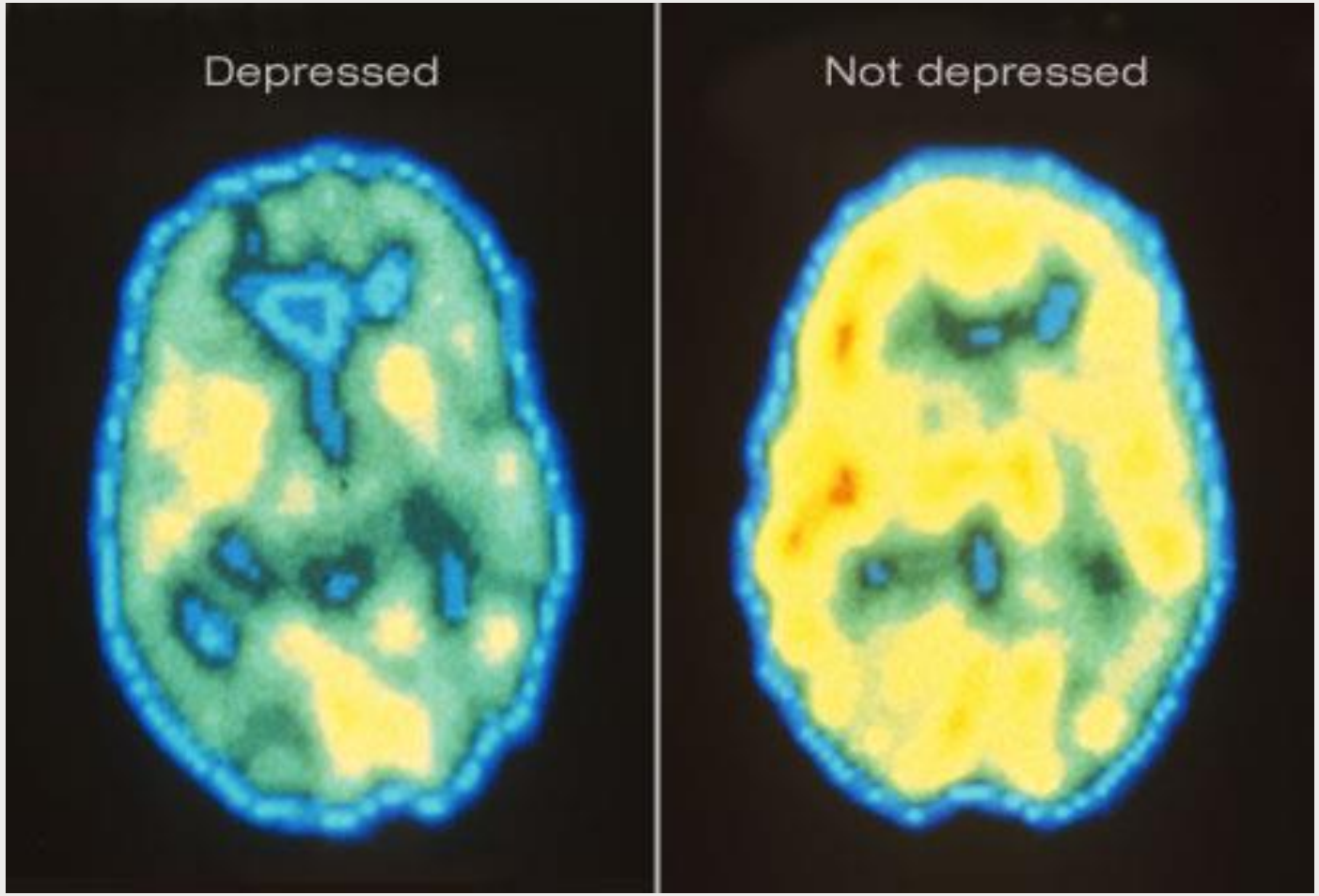
- Memory
- Concentration, attention and focusing
- Learning and understanding new things
- Processing & understanding information including following complicated directions
- Language problems
- Problem-solving, organization, decision-making
- Impulse control
- Slowed or cloudy thinking
- Negative beliefs about self, world & future

Affective/Behavioral Problems

- Frustration or irritability
- Depression/sad
- Anxiety
- Reduced tolerance for stress
- Sleep problems
- Numbing out or flipping out
- Inflexibility
- Feeling less compassionate or warm towards others
- Feeling guilty
- Feeling helpless/hopeless
- Denial of problems
- Social appropriateness

Somatic Complaints

- Headache
- Fatigue
- Poor balance
- Dizziness
- Changes in vision, hearing, or touch
- Sexual problems



Shown here are PET scans of the brain showing different activity levels in a person with depression, compared to a person without depression

Sleep disorders are common after concussion

- Service Persons with physical, cognitive or behavioral/emotional symptoms following concussion should be screened
- Insomnia is the most common sleep disturbance following concussion
- Primary care diagnosis and management is facilitated by a focused sleep assessment
- Non-pharmacological measures are the foundation for care, to include stimulus control and sleep hygiene

Referral to a sleep medicine specialist may be necessary or likely

- Especially for chronic insomnia (after initial management
- Sleep disturbances can significantly exacerbate or impact other concussion symptom

Sleep Disorders Assessment

Area of Assessment	Examples
Symptoms	Difficulty initiating and/or maintaining sleep, non-restorative sleep, nightmares, snoring, awakening with gasping and choking, fatigue, tiredness or drowsiness during the daytime
Consequences	Cognitive impairment, mood disturbances, irritability, decrease in functional ability, role interference (family, social, academic, occupational)
Predisposing factors	Pre-concussion sleep pattern, prior history of a sleep disturbance, excessive weight, increasing neck circumference, narrow upper airway, older age, genetic factors, mood disturbances, anxiety or preoccupation concerning sleep quality, medications, other co-morbid behavioral health or medical conditions
Precipitating factors	Concussion, deployment, acute stress
Perpetuating behavioral factors	Napping, excessive caffeine/stimulant use, irregular sleep schedule Watching TV, reading, working on a computer, or playing video games while in bed
Perpetuating environmental factors	Light, noise, travel and time zone changes
Perpetuating psychosocial factors	Familial stress, inadequate social support system, financial stress, safety concerns or other worries
Perpetuating occupational factors	Shift work, standing watch, duty schedule incompatible with preferred sleep schedule, work stressors
Perpetuating physical factors	Pain, discomfort, tinnitus
Perpetuating lifestyle factors	Alcohol use, diet, smoking, limited physical activity, family and community obligations

Cognitive Behavioral Therapy for Insomnia (CBT-I) is most effective treatment for insomnia

Stimulus Control	Sleep Hygiene
Remove TV, radio, smartphone, electronic tablet, computer and other electronic devices from bedroom	Avoid caffeine/stimulant intake within six hours of bedtime
Relax before bedtime; avoid going to bed worried or angry; use the bedroom only for sleep and intimacy	Engage in exercise daily during the morning or afternoon; avoid exercise close to bedtime
Go to bed only when tired and sleepy	Avoid alcohol and nicotine use, large/ heavy meals and excessive fluid close to bedtime
If unable to fall asleep within 15-20 minutes, get up, go to another room with the lights dim and do something relaxing while avoiding electronic use (TV, computers, phone); return to bed when sleepy -Repeat above, as needed throughout the night, even after awakenings	Promote a sleep friendly environment, minimize noise and light, maintain a cool but comfortable temperature
	Get up at the same time every morning (regardless of the amount of sleep obtained), even on the weekends; avoid daytime naps
	Get exposure to natural light every morning

Pain

Chronic Pain is a common issue of OEF and OIF Returning Veterans/as well as civilians which can hide or exacerbate TBI or PTSD Symptoms and Needs to be Treated

VA/DOD Expert Consensus Guidelines

1. **Assessment:** What are the best approaches to assess, PTSD, history of mTBI and pain in Veterans presenting for treatment? Use diagnostic tools to screen for all three. Determine comorbidities and if the symptoms are current or historical. Rule out possibility of depression and substance abuse
2. **Treatment Planning:** What are the challenges of treatment planning with a Veteran comorbid PTSD, pain & history of mTBI? Make sure patient has an understanding of what treatments will be used for which symptoms
3. **Treatment:** What do practice guidelines tell us about the most effective PTSD, pain & a history of mTBI treatment strategies? Use guideline for all 3 specific conditions. Deliver a consistent message which is encouraging for recovery.

Evidenced Based Practices for PTSD, TBI & Pain

- PTSD: Prolonged Exposure or Cognitive Processing Therapy
- TBI: Rehabilitation interventions
- Pain: Rehabilitation interventions
  - *Use psychoeducation to help them to recognize that pain has a role as trigger for PTSD & increased anxiety*
  - *After treat PTSD, consider CBT for Chronic Pain*

Assessments of Comorbidities

Overall Symptom Assessment

- Neurobehavioral Symptom Inventory (NSI)

TBI

- DVBIC 3 Question TBI Screening Tool
- Military Acute Concussion Evaluation (MACE)

PTSD

- PCL (PTSD Checklist)
- CAPS
- Combat Exposure Scale (CES)

Sleep Disorder

- Berlin Questionnaire
- Insomnia Severity Index
- Morningness-Eveningness Questionnaire
- STOP-BANG Questionnaire
- Epworth Sleepiness Scale

PAIN

- Initial Pain Assessment
- Initial Pain Assessment Tool
- Patient Comfort Assessment Guide
- Visual Analog Scale
- Wong-Baker Faces Pain Rating Scale

APPS For PTSD & TBI related Comorbidities

MTBI

- mTBI Pocket Guide

PTSD

- PE Coach
- PTSD Coach
- CPT Coach

Sleep

- CBT-I Coach
- White Noise

Addictions

- Quitter

Depression & Anxiety

- T2Mood Tracker
- Tactical Breather
- Breathe2Relax
- LifeArmor
- Goal Setting

Suicide Prevention

- Moving Forward
- Safe Helpline
- ASK

Treatment Manuals For TBI related Comorbidities

PTSD:

Foa, E.B., Hembree, E.A. & Rothbaum, B.O. (2007). *Prolonged Exposure Therapy for PTSD Emotional Processing of Traumatic Experiences Therapist Guide.* NY: Oxford University Press.

Resick, P.A., Monson, C.M. & Chard, K. M. (2008*). Cognitive Processing Therapy Veteran/Military Version: Therapist Manual.* Washington, D.C.: Department of Veterans Affairs.

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Otis, J.D. (2007). *Managing Chronic Pain A Cognitive-Behavioral Therapy Approach.* NY: Oxford University Press.

Treatment Manuals For TBI related Comorbidities

Sleep Related:

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Substance Use Disorders:

Daley, D.C. & Marlatt, G. A. (2006) *Overcoming Your Alcohol or Drug Problem: Effective Recovery Strategies.* NY: Oxford University Press

Epstein, E.F. & McCrady, B.S. (2009) *A Cognitive-Behavioral Treatment Program for Overcoming Alcohol Problems.* NY: Oxford University Press

Top 10 Tips to Promote Successful Coping with Comorbidities of PTSD & TBI

1. Stay physically active: Exercise daily. Avoid impairment and disability due to becoming physically inactive ("If you don't use it, you will lose it")

2. Stay mentally active: Learn something new every day. Exercise your brain with daily "brain jogging," such as reading books, newspapers, and magazines. Again: "Use it or lose it."

3. Stay connected to other people: Treasure and nurture the relationships you have with your spouse/partner, your family, friends, and neighbors. Reach out to others—including younger people. Stay involved in your community.

4. Don't sweat the small stuff: Don't worry too much. Be flexible and go with the flow. Don't lose sight of what really matters in life.

5. Set yourself goals and take control: It is important to have meaningful goals in life and to take control in achieving them. Being in control of things gives us a sense of mastery and usually leads to positive accomplishments.

6. Create positive feelings for yourself: Experiencing positive feelings is good for our body, our mental health, and for how we relate to the world around us. Feeling good about our own age is part of this.

7. Minimize life stress: Many illnesses are related to life stress, especially chronic life stress. Stress has a tendency to "get under our skin," if we notice it or not. Try to minimize stress and learn to unwind and "smell the roses."

8. Adopt healthy habits: Maintain optimal body weight. Eat healthy food in small portions. Drink alcohol in moderation. Quit smoking. Floss your teeth. Adopt good sleeping habits.

9. Have regular medical check-ups: Take advantage of health screenings and engage in preventive health behavior. Many symptoms and illnesses can be successfully managed if you take charge and if you partner with your health care providers.

10. It is never too late to start working on Tips 1 through 9: It is never too late to make changes.

Goal for Patients with Complex Comorbidities to Improve Functioning

- Reduce Sleep Disturbance
- Lessen Stress & Anxiety Symptoms
- Lessen Depressive Symptoms
- Deconditioning from pattern of responses to Triggers
- Reduction of Headaches
- Reduction of Bodily Pain

Treat what you can treat!