Priority assistance to the military: Management of psychological effects of combat and other high-risk (firefight, civilian support) operations

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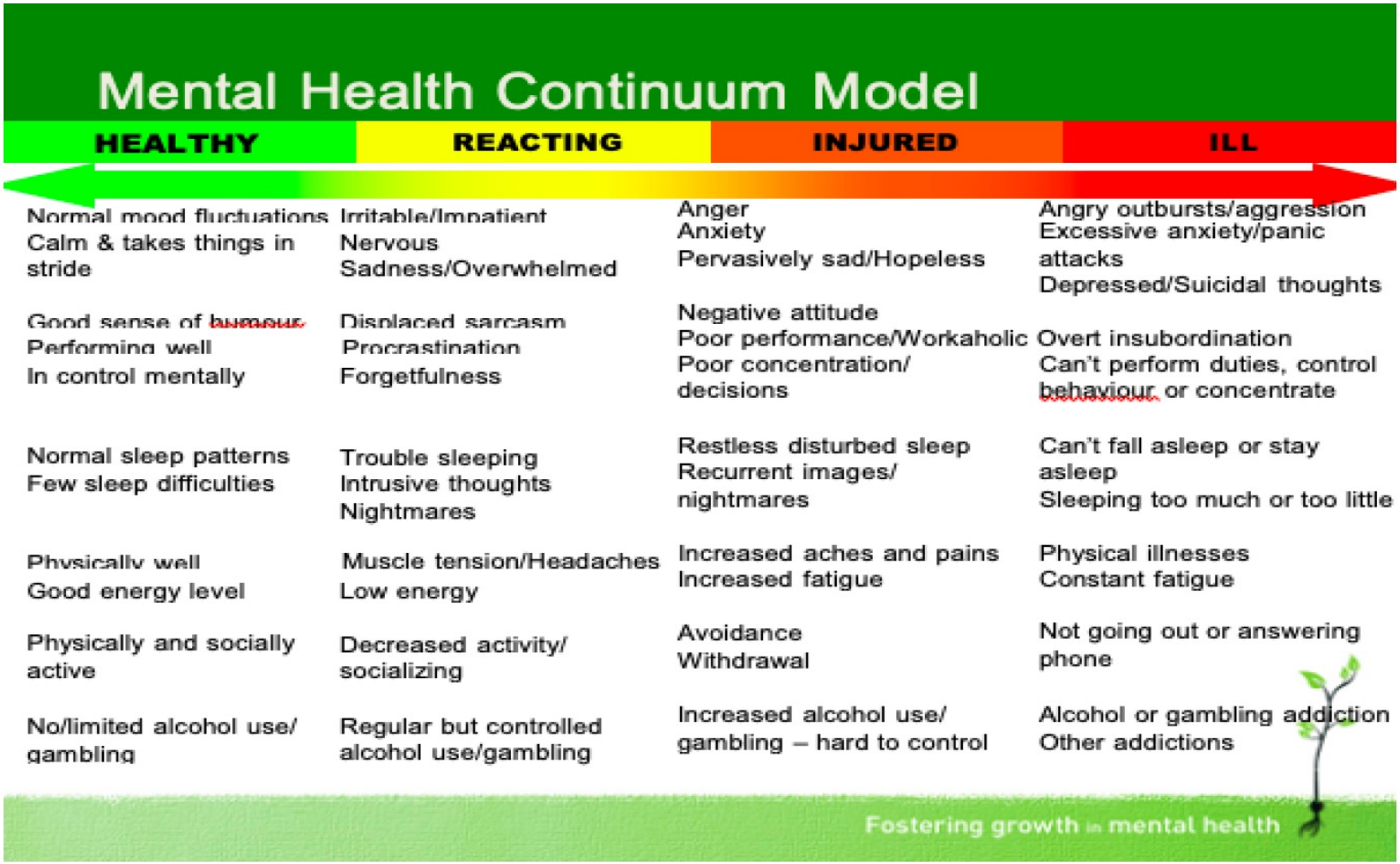
- FRAMEWORK FOR MANAGEMENT OF OPERATIONAL STRESS
  - Military operations – high risk for exposures to traumatic events
    Conceptual model – Stress Continuum Model
  - Emotion Regulation – a brain/body phenomenon- interactions between physical and psychological injuries
  - Framework for management of psychological health
- Acute stress reactions (ASR)
- Identification, triage, diagnosis of stress injuries
  - Early identification and awareness of identifiable risk factors
- Combat related PTSD –
  - Current understanding of long-term trajectories
  - Public health considerations

- Context
  - Risk for adverse mental health consequences in the military extends through enlistment and into post-military life
  - Combat operations involve exposures to potentially psychologically traumatic events; can have a severe impact on physical, mental and social health
  - Current approaches to interventions for adverse psychological consequences of combat rest upon concepts of Frontline Psychiatry, first developed during WWI

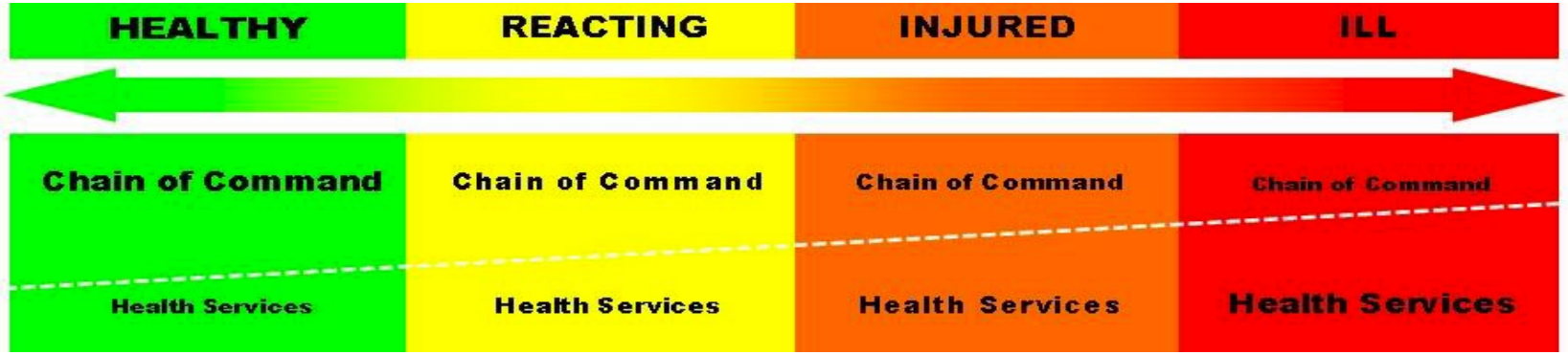
1. Bricknell, Williamson, Wessley. EDITORIAL Occupational Medicine 2020; 70: 216-218.
2. A LEADER'S GUIDE TO PSYCHOLOGICAL SUPPORT ACROSS THE DEPLOYMENT CYCLE
https://www.coemed.org/files/stanags/03_AMEDP/AMedP-8.10_EDA_V1_E_2565.pdf
3. FORWARD MENTAL HEALTH CARE
https://www.coemed.org/files/stanags/03_AMEDP/AMedP-8.6_EDB_V1_E_2564



STRESS CONTINUUM MODEL

FRAMEWORK FOR MANAGEMENT OF PSYCHOLOGICAL HEALTH

- Chain of command (military leadership) – overall responsibility for psychological welfare of servicemembers under their command
- Mental health support staff role:
  - Training and/or combat operations for clinical assessment, triage, engagement, treatment and rehabilitation as needed, and
  - Education or mental health promotion to groups considered to be at high risk (e.g. body handlers)
  - Other advisory support as needed



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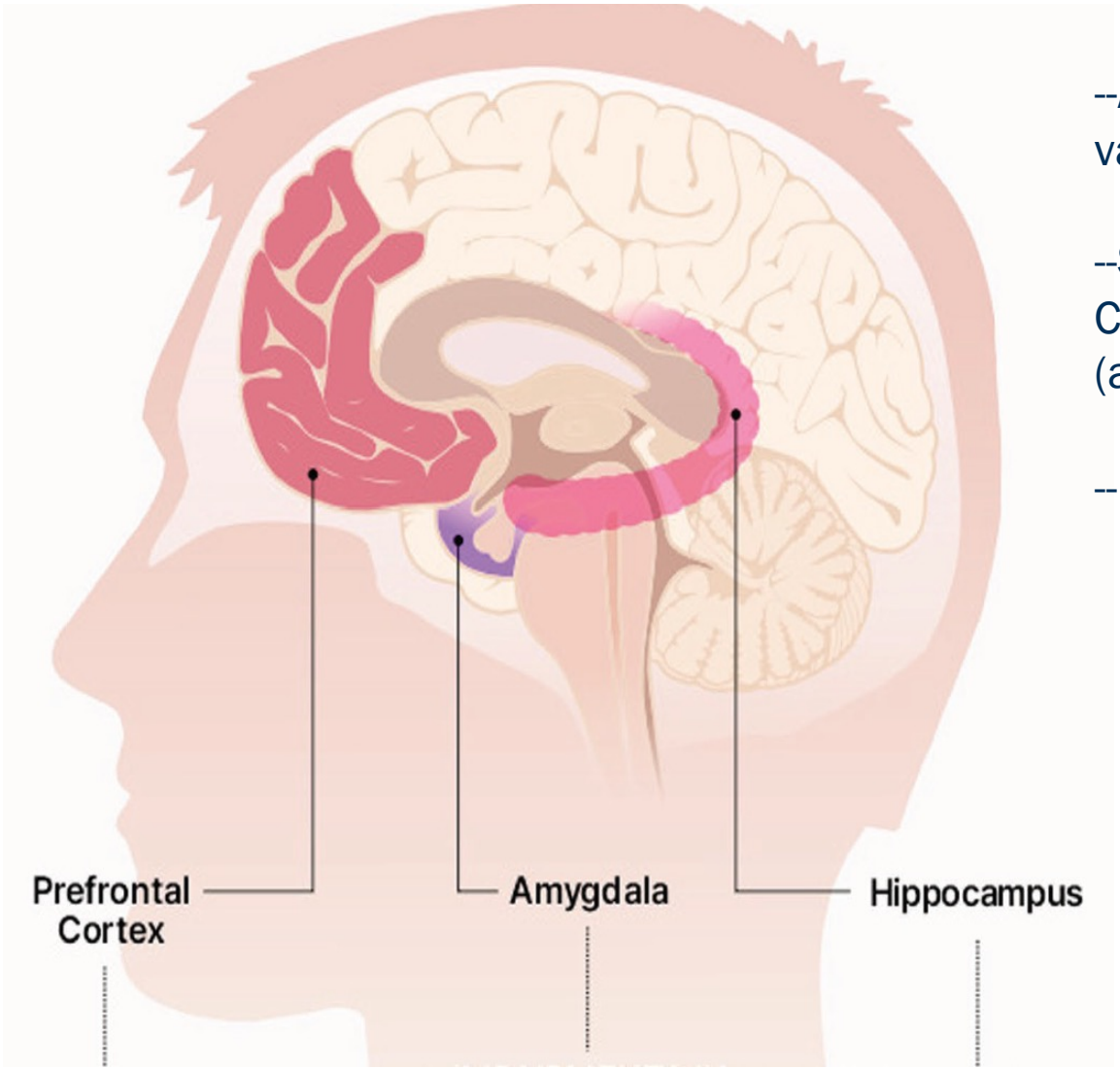
EMOTION REGULATION



BRAIN-BODY COMMUNICATION

--AUTONOMIC nervous system – vagal nerve

--STRESS HORMONES
Cortisol, Norepinephrine (adrenaline)

--IMMUNE SYSTEM

STRESS INJURY:
The thinking and emotional brain systems no longer communicate efficiently and lose plasticity AND body functions – sleep, circulation, pain become unhealthy and lose adaptability

HEALTH PROMOTION/UNIVERSAL PREVENTION
OR/Staying in the Green/Yellow Zones

- **Train:** Tough, realistic training to develop physical and mental strength and endurance and enhance confidence ability to cope with challenges and **Mitigate: C**onserve unit physical mental, social resources to the degree possible
- Build a resilience training component into skills training
  - Enhance parasympathetic tone: Heart rate and heart rate variability are measure of the autonomic nervous system; they measure fitness and are windows into the brain
    Heart rate, heart rate variability: train to Window of tolerance
  - Mental skills: Calming breathing techniques (e.g. 4-1-5), yoga techniques, mindfulness meditation
  - Reduce stress hormones and inflammation: Healthy behaviors: adequate sleep, low use of alcohol, healthy diet

MCTP 3 30E Combat and Operational Stress Control
https://www.marines.mil/1/publications/MCTP%203-30E%20Formerly%20MCRP%206-11C.pdf?ver=2017-09-28-081327-517

HEALTH PROMOTION/UNIVERSAL PREVENTION OR/Staying in the Green/Yellow Zones –

- **Unit Cohesion**: Develop and maintain unit cohesion: Promote trust and communication both horizontally (peer to peer) and vertically (leader to subordinate)
- Provide a 'holding environment" (Winnicott)
  - Co-Regulation: A healthy unit provides support through co-regulation- defined as warm and responsive interactions that provide support, coaching, and modeling. This environment decreases negative amygdalar discharge, reduces stress and allows for more "thinking" - unit coordination and planning.
  - Threats to cohesion: 1. Loss or turnover of unit members or leadership especially right before a deployment; 2. Hazing within the unit or 3. Prolonged or repeated deployments

MCTP 3 30E Combat and Operational Stress Control
https://www.marines.mil/1/publications/MCTP%203-30E%20Formerly%20MCRP%206-11C.pdf?ver=2017-09-28-081327-517

COMBAT OPERATIONS - STESSORS

Life-threat: Due to exposure to lethal force or its aftermath in ways that exceed the individual's capacity to cope normally in the moment; provokes feelings of terror, horror, or helplessness

Loss: Death of close comrades, leaders, or other cared-for individuals or the loss of relationships, aspects of oneself, or one's possessions

Inner Conflict: Moral damage from carrying out or bearing witness to acts or failures to act that violate deeply held belief systems

Wear and Tear: Accumulated effects of smaller stressors over time, such as from nonoperational sources or lack of sleep, rest, and restoration.

MCTP 3 30E Combat and Operational Stress Control
https://www.marines.mil/1/publications/MCTP%203-30E%20Formerly%20MCRP%206-11C.pdf?ver=2017-09-28-081327-517

ORANGE ZONE STRESS and ACUTE STRESS REACTIONS

Definition: Acute Stress Reaction (ICD-11)

Synonyms: combat stress, battle fatigue, battle shock reaction, combat stress reaction, battle stress reaction

- Development of a transient emotional (anxiety), cognitive (appearing dazed or confused), somatic or behavioral (stupor or overactivity) symptoms as the result of exposure to an extreme event
- Expected to subside within a few minutes to a few days
- Likely acute impairment but can persist

ASR is a sign of excess amygdala discharge
The amygdala takes over. The thinking brain goes off-line.

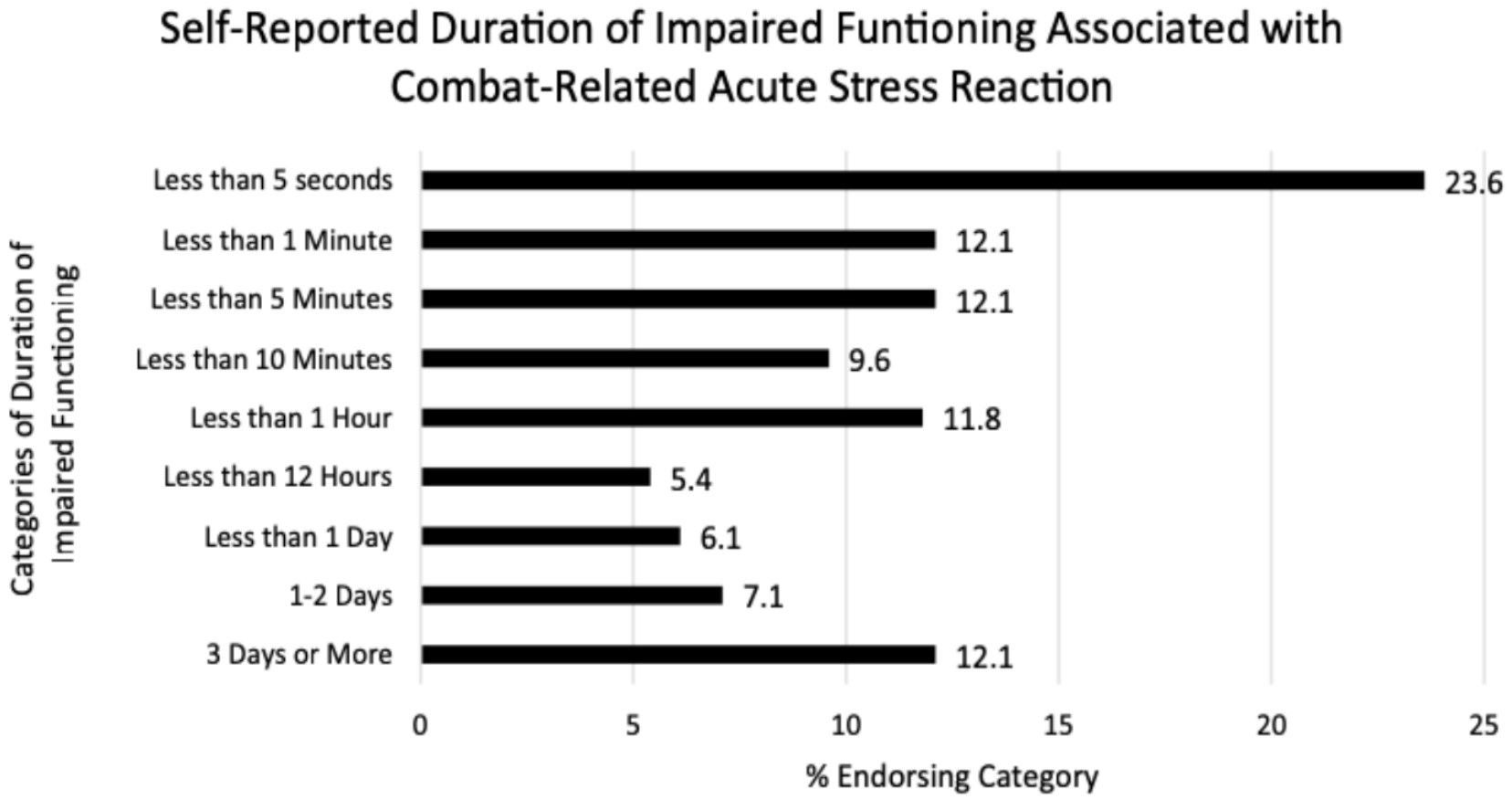
The number of likely ASR is unique to each specific combat operation; linked to the operational tempo, nature and duration of deployment, home factors, physical health, occupational stressors.

Adler & Gutierez Current Psychiatry Reports. (2022) j24: 277-284
FORWARD MENTAL HEALTH CARE https://www.coemed.org/files/stanags/03_AMEDP/AMedP-8.6_EDB_V1_E_2564

- Acute Stress Reaction (ASR)
  - ASR occurring during combat operations are not uncommon – based on data from recent studies, ~17% - ~29% of combatants endorsed experiencing an ASR
  - Recent research indicates that percent experiencing an ASR does not differ by gender. ASR was reported by all military ranks: Junior enlisted (15%), NCO (20%) and Officer (13%)
  - ASR can impact perception (auditory distortion, tunnel vision, temporal slowing) and decision making
  - ASR is observable by other unit or team members (~40% - 50% endorsed observing ASR), the most common description being "unable to function" "increasing risk to the unit"

Adler A. & Gutierez I. ASR in Combat: Emerging Evidence & Peer Based Interventions Current Psychiatry Reports. (2022) j24: 277-284
Adler A, Svetlitzky V. & Gutierrez I. BJPsych Open (2020) 6, e98, 1–7
Svetlitzky V. Farchi M. Ben Yehuda A. Adler A. J Nerv Ment Dis 2020;208: 803–809

- Acute Stress Reactions (ASR)
  - ASR duration: ~48% < 5 minutes; ~52% > 5 minutes,
    ~19% lasting a day or more; ~12% lasting 3 days or more



Adler A. & Gutierez I. Current Psychiatry Reports. (2022) j24: 277-284

- Acute Stress Reactions (ASR)
  - There is some evidence that unit members who observe ASR behaviors in a peer may may be negatively affected – may later have higher rates of PTSD themselves
  - Training may help the unit manage ASR experiences and exposures
  - Training may help reduce ASR-related stigma

  - Peer support training is in development by United States (iCOVER), Israeli (YaHaLOM) and other NATO militaries to optimize unit (peer) detection and response to ASR

  - These training programs are currently being assessed for acceptability and effectiveness; long-term benefits are suggestive, but are not yet proven

Adler A. & Gutierez I. ASR in Combat: Emerging Evidence & Peer Based Interventions Current Psychiatry Reports. (2022) j24: 277-284
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ACUTE STRESS REACTION
PEER INTERVENTIONS

- Guiding principles of the peer interventions
  - Consistent with research evidence of known physiology of acute stress
  - Integrate Forward Psychiatry concepts that have inherent military cultural meaning, such as immediate return to functioning, commitment to mission, and social support
  - Simple enough to be delivered by nonprofessionals
  - Practical for rapid delivery in a high-stress context

- Relying on team members to address ASR is a practical solution, and it is consistent with the culture of the military

- Resilience techniques taught during training can be applied

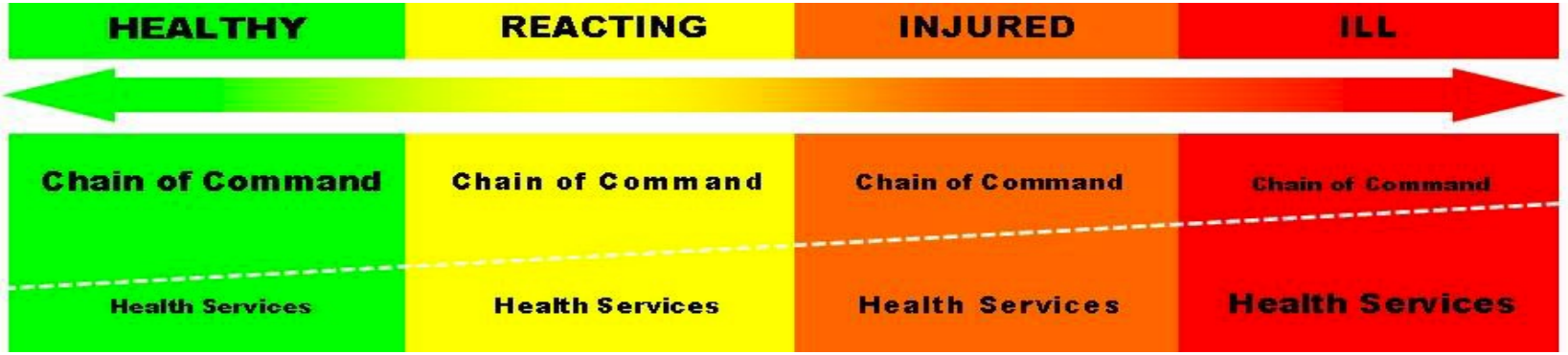
Svetlitzkya, Farchib, Ben Yehudaa, Adler. MILITARY BEHAVIORAL HEALTH 2020, VOL. 8, NO. 2, 232-242

PEER INTERVENTION FOR ACUTE STRESS REACTION
*Bring the thinking brain back on-line

1. Connect	-Make eye contact -Call the person's name --Squeeze the person's arm	Ensure that the individual pays attention using different sensory channels
2. Emphasize commitment	-Assure the person that he or she is not alone; you are present	Break through the person's sense of isolation
3. Inquire facts	-Ask the individual simple fact-based questions relevant to the present moment	Engage the frontal cortex – the thinking brain
4. Confirm the sequence of events	-Describe in simple language what has happened, what is happening, and what will happen	Orient the person using a variety of grounding statements
5. Give an order	Direct the person to carry out a specific action	Prompt the person to begin functioning, reducing the sense of helplessness

Svetlitzkya V. Farchib M. Ben Yehudaa A. Adler. A. MILITARY BEHAVIORAL HEALTH 2020, VOL. 8, NO. 2, 232-242

ORANGE ZONE STRESS
ACUTE STRESS REACTION VS ACUTE STRESS DISORDER



- Effective management of mental health problems is a force multiplier; specialist mental health capability is part of overall in operational medical support.
- While many combatants with ASR will recover quickly close to the event, with the expectation that they will return to full function, in line with principles of Frontline psychiatry (PIE) but others may need a mental health diagnostic evaluation, triage and treatment.

FORWARD MENTAL HEALTH CARE https://www.coemed.org/files/stanags/03_AMEDP/AMedP-8.6_EDB_V1_E_2564

COMBAT-RELATED MENTAL HEALTH DIAGNOSES

- Acute Stress Disorder (DSM 5)
  - At least 9 of 14 symptoms that include:
    - Persistent re-experiencing of the traumatic event through recurrent images, nightmares, reliving the event, or distress on experiencing reminders of the event
    - Marked avoidance of stimuli that are reminders of the event such as thoughts, feelings, places, people, conversations
    - Marked symptoms of hyperarousal such as difficulty sleeping, irritability, hyperarousal, poor concentration, exaggerated startle, restlessness
    - Persistent inability to experience positive emotions
    - Dissociative Symptoms – altered sense of reality of oneself or one's surroundings or inability to remember aspects of the trauma
  - Lasts at more than 3 days or up to a month
  - Distress and likely impairment in functioning

ACUTE STRESS DISORDER RECOVERY

- Although acute stress disorder was introduced partly to predict subsequent PTSD, longitudinal studies indicate that ASD is not an accurate predictor of PTSD development
- There is no strong evidence that any medication is useful in preventing ASD from evolving into PTSD
- Reduce arousal – i.e. “regulate” emotion, empathically engage i.e. “relate” and then “reason” i.e. provide brief therapy - may be the best currently available strategy to limit PTSD development in ASD
- Social support is a consistently named protective factor for mitigation of PTSD development

Bryant R. Current Psychiatry Reports (2018) 20: 111
Bryant R. Clinical Psychology Review 85 (2021) 101981
Churchill R, Ostuzzi G, Stein DJ, Williams T, Barbui C. Cochrane Database Syst Rev. 2022 Feb 10;2(2):CD013443.

IDENTIFY and REFER if needed

- Observable factors that should precipitate early referral for mental health evaluation and assessment
  - Significant sleep problems or sleep change
  - Excess alcohol use or drug use
  - Mild Traumatic Brain Injury; may even brief (<1 min) loss of consciousness
  - Expressions of hopelessness or suicidal thoughts
  - Co-occurring physical combat wounds; excess pain

- There is not a linear relationship between initial responses to trauma events, e.g. ASR and long-term adaptation to trauma. Loss, inner conflict, wear and tear and may also play a role

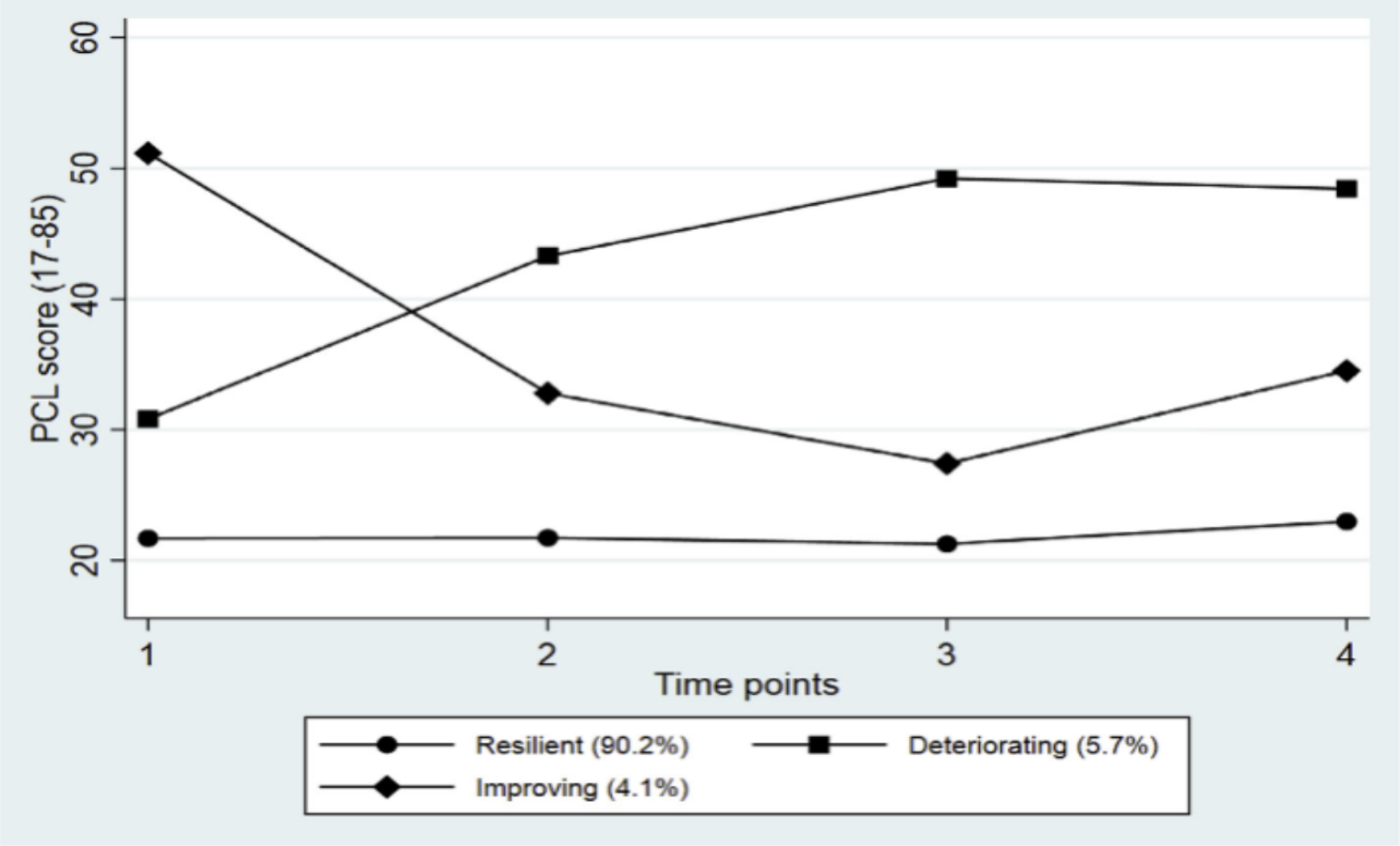
Yurgil K et al., Association between TBI & risk of PTSD in active-duty Marines. JAMA Psychiatry. 2014;71(2):149-57
Stein M et al., J Neurotrauma. 2016 Dec 1;33(23):2125-2132
Giordano N et al., Differential Pain across PTSD Trajectories after Combat. Pain Med. 2021 Nov 26;22(11):2638-2647.
Van der Waal SA, Vermetten E, Elbert G. European Psychiatry, 64(1), e10
Simon Wessely a , Roberto J. Rona Journal of Psychiatric Research 109 (2019) 156–163.

STRESS-PRECIPITATED MENTAL HEALTH DIAGNOSES

- Post traumatic Stress Disorder (DSM5) -- Most common
  - Presence of intrusive symptoms
  - Persistent avoidance of stimuli associated with the traumatic event
  - Negative alterations in cognitions and mood
  - Trauma-related arousal and reactivity
  - Lasts more than a month – may last for decades

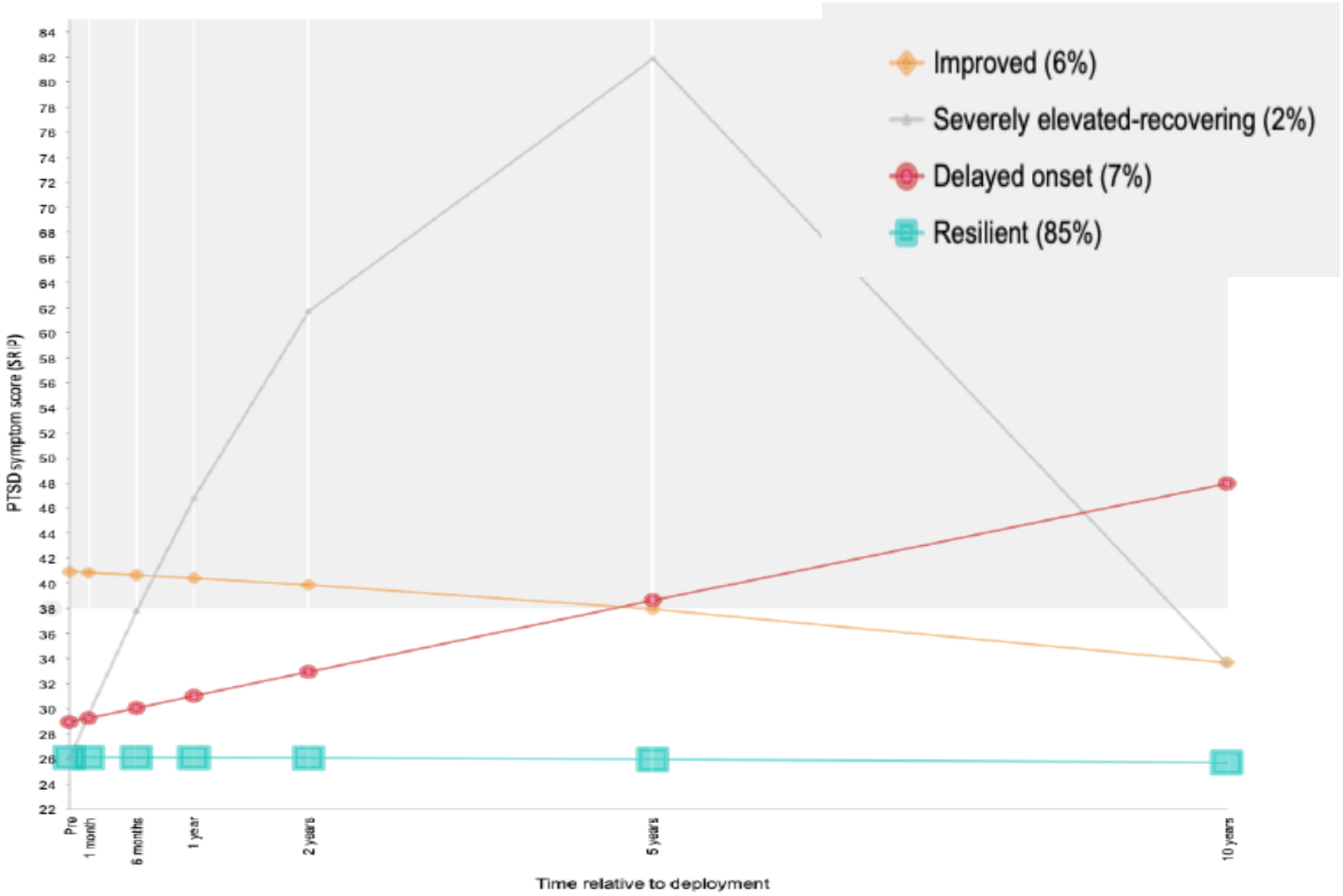
- Other diagnoses to be considered and ruled out by a clinician
  - Depression
  - Other anxiety disorder(s) – Panic disorder, Obsessive Compulsive Disorder, Generalized Anxiety Disorder
  - New onset Psychosis
  - Bipolar Disorder/Mood Cycling
  - Alcohol or substance use disorders
  - Depression, Anxiety disorders and mood cycling my co-occur with PTSD

14 YEAR FOLLOW-UP of PTSD DEVELOPMENT TRAJECTORY BRITIAN



Palmera,L, Thandi G, Norton S, Jones M, Fearc N, Wessely S, Rona R. Fourteen-year trajectories of posttraumatic stress disorder (PTS symptoms in UK military personnel, and associated risk factors. Journal of Psychiatric Research 109 (2019) 156–163.

10 YEAR FOLLOW-UP of PTSD TRAJECTORY: NETHERLANDS



Van der Waal SA, Vermetten E, Elbert G. . Long-term development of post-traumatic stress symptoms and associated risk factors in military service members deployed to Afghanistan: Results from the PRISMO 10-year follow-up.European Psychiatry, 64(1), e10.

PUBLIC HEALTH IMPLICATIONS

- Risk for adverse mental health consequences of combat deployments is long lasting – it extends through enlistment into post-military life

- While the likelihood of exposure to high levels of stress and trauma events during military enlistment is high
  - Most servicemembers are resilient
  - Early identification and intervention for those who do develop mental health symptoms may reduce long-term morbidity

- Mental health treatments should be fully integrated into any organized healthcare system the deployed and war wounded

SUPPLEMENTAL SLIDES

- End of Talk: Any Questions?
- Supplemental slides: Full Diagnostic Criteria for PTSD

COMBAT-RELATED MENTAL HEALTH DIAGNOSES

- Post traumatic Stress Disorder (DSM5)
  - Presence of one or more of the following intrusive symptoms
    - Recurrent, involuntary, and intrusive distressing memories of the trauma Recurrent distressing dreams related to the trauma
    - Dissociative reactions in which the individual feels or acts as if the traumatic event(s) were recurring
    - Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the trauma Marked physiological reactions to internal or external cues that symbolize or resemble an aspect of the traumatic event
  - Persistent avoidance of stimuli associated with the traumatic event, as evidenced by one or both
    - Avoidance of or efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).
    - Avoidance of or efforts to avoid external reminders (people, places, conversations, activities, objects, situations) that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).

COMBAT-RELATED MENTAL HEALTH DIAGNOSES

- Post traumatic Stress Disorder (DSM5)
  - Negative alterations in cognitions and mood associated with the traumatic event(s), as evidenced by two (or more)
    - Inability to remember an important aspect of the traumatic event(s)
    - Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world
    - Persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead to blame of self or others
    - Persistent negative emotional state
    - Markedly diminished interest or participation in significant activities.
    - Feelings of detachment or estrangement from others.
    - Persistent inability to experience positive emotions (e.g., happiness)

COMBAT-RELATED MENTAL HEALTH DIAGNOSES

- Post traumatic Stress Disorder (DSM5)
  - Trauma-related arousal and reactivity that began or worsened after the trauma event
    - Irritable behavior and angry outbursts (with little or no provocation), typically expressed as verbal or physical aggression toward people or objects
    - Reckless or self-destructive behavior.
    - Hypervigilance.
    - Exaggerated startle response
    - Problems with concentration
    - Sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep)
  - Duration of the disturbance is more than 1 month
  - The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning
  - The disturbance is not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition