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Warrior Pose:
Building Readiness through
Resilience — Yoga and Meditation

by

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Abstract

The foundation for readiness is resilience, which aligns with the warrior ethos and is an enduring quality of good leaders. A variety of techniques and practices including yoga, trauma sensitive yoga, systematic relaxation, breathing (pranayama), meditation, yoga nidra, and iRest Yoga Nidra are evidenced based tools with proven efficacy for improving the health and resilience of Joint Force service members and their families. Leading change in the Joint Force to adopt these tools for all service members' comprehensive physical, mental, and spiritual fitness is vital in a world of greater uncertainty, but barriers exist both at individual and organizational levels. This paper defines relevant terms; reviews the extensive literature on the subject, with particular attention to the conclusions of studies conducted with veteran and military populations; examines the relevance of these tools to the modern warrior ethos and military culture; and makes specific recommendations regarding cultural and institutional change to facilitate program implementation.

Warrior Pose: Building Readiness through Resilience — Yoga and Meditation

The rigors of military service create unique stressors on uniformed service members and their families. Better mental, spiritual, emotional, behavioral, and physical health may reduce violence and aggression, which can be unhealthy outlets for accumulated stress. Harvard Medical School yoga researcher Dr. Sat Bir Singh Khalsa suggests that yoga and meditation change the perception of what is stressful--the indicators for measuring that are improved emotional and stress reactivity as a function of increased resilience.¹ Yoga is one among a set of tools for increasing resilience and readiness. United States Army Captain Enrique Incle observes:

Yoga has been a tremendous source of strength to me. It has enabled me to obtain inner peace, and control the memories which caused me anxiety for many years. Yoga is a tool for injury prevention, rehabilitation, and health promotion, and it needs to be championed because our Soldiers deserve every chance to continue to serve and stay in the fight. I was once a skeptic, but now I'm proof of its effectiveness and restorative properties. In the near future, I hope that yoga is implemented on a broader scale across our military formations.²

Incle's moving testimonial suggests that yoga, systematic relaxation, meditation, and breath-focused mindfulness programs can improve even a skeptic's individual resilience and bolster enterprise level readiness if such programs are adequately supported. It is time for senior leaders to institutionalize, amplify, and elevate the importance of a set of evidence-based tools (yoga, systematic relaxation, and meditation, which rely on active use of the breath) for improved readiness, resilience, and comprehensive fitness in the Joint Force. This paper provides that analysis through four focus areas: (1) the yogic toolbox, (2) current program structure and policy architecture, (3) the evidence base, and (4) an evaluation of arguments in favor and opposed to programmatic interventions. The final section addresses five common

arguments: lack of time, increased cost, having unwilling participants, concern about yoga's "Eastern" origins, and structure. This paper concludes with recommended organizational cultural changes to improve resiliency programs and implementation guidance for those reforms.

Captain Ingle's experience invites exploration into how the U.S. military might introduce and systematically ensure these tools are available for all service members during all deployment phases to increase readiness and resilience in the total force. The Army defines resilience as "the mental, physical, emotional, and behavioral ability to face and cope with adversity, adapt to change, recover, learn, and grow from setbacks."³ The purpose of yoga, systematic relaxation, focused breathing, and meditation is to connect the mind and body through the breath so one is "fully present," conscious in the moment, ready, and willing to face life's challenges and opportunities.

There are three measures—effectiveness, a needs assessment, and a feasibility analysis—to consider when examining the resourcing required to implement a program.⁴ First, there is ample research of the benefits on yoga, systematic relaxation, and meditation among civilians and veterans and sufficient evidence for service members. Second, the need for these tools exists based on the need for resilience. The risk of suicide among veterans is 21 times higher than the U.S. population; on average, 20 veterans a day die from suicide. Senator John McCain said, "Combatting this epidemic will require the best research and understanding about the key causes of veteran suicide, including whether overmedication of drugs, such as opioid pain-killers, is a contributing factor in suicide-related deaths."⁵ The statistics and concerns cited by the Senator suggest the need for a deeper examination of root causes including

identifying out of the box tools to increase resilience among service members. “Mental health disorders have historically accounted for significant morbidity, healthcare utilization, disability, and attrition from military service. From 2007 through 2016, a total of 853,060 active component service members were diagnosed with at least one mental health disorder and 115,378 were diagnosed with mental health problems related to family/support group problems, maltreatment, lifestyle problems, or substance abuse counseling.”⁶ Third, programs and instructors (service members, family members, and civilians) already exist on military installations and Veterans Administration (VA)-run programs, providing a template for the Joint Force when institutionalizing yoga, systematic relaxation, and meditation training across the Joint Force.

The Yogic Toolbox for Readiness and Resilience

The set of tools in the realm of readiness and resilience have a variety of names and definitions. The main concepts of yoga, trauma sensitive yoga, systematic relaxation, iRest Yoga Nidra, breathing, meditation, and mindfulness all have a role to play in updated resiliency programs. This section provides an analysis of where targeted implementation of these concepts would provide the most benefit to service members.

Yoga and the Yogic Toolbox

Yoga, as understood and practiced among members of the Armed Forces, veterans, families, and the American public writ large, is primarily *hatha yoga*—a Sanskrit phrase that includes *asana*, a steady and comfortable posture or more specifically, physical poses accompanied by breath work, focused inhalation and exhalation, to move energy mindfully and efficiently to achieve a specific goal. Systematic relaxation, at its simplest, is a scan of the body from head to toe, mindfully

paying attention to each part of the body.⁷ A short 3 to 10 minute systematic relaxation is useful after any vigorous physical exercise (or daily physical training) or a *hatha yoga* practice. Meditation, on the other hand is a seated practice done primarily for stilling of the mind, and that relies on *pranayama*, breath work, as a foundation.⁸

Trauma Sensitive Yoga

Trauma sensitive yoga focuses on awareness of the breath, with an eye to greater integration between the sympathetic and parasympathetic nervous systems for improving heart rate variability, a marker for physiological health.⁹ Trauma sensitive yoga has four themes: (1) training attention to the present moment experience by non-judgmentally focusing on breath and body sensation, (2) making self-supporting healthy choices in the moment, (3) taking effective action to adjust to each moment's developments, and (4) creating a rhythm for oneself, to be more in sync with the basic rhythm of life in the body and with life itself.¹⁰ Trauma sensitive yoga is relevant for any individual affected by a traumatic experience, including combat veterans and survivors of sexual assault or trauma. In her foundational work on trauma, Judith Lewis Herman reminds us that trauma is not new to America's military.¹¹ Terms like shell shock, battle fatigue, and combat exhaustion emerge in the lexicon as a result of involvement in World War I combat experience.¹² There were 1.4 million cases of battle fatigue in World War II.¹³ However, these terms were forgotten as those with "psychiatric disabilities...had become an embarrassment to civilian societies eager to forget."¹⁴ These issues came to a head, as Herman describes, with the Vietnam War as "the moral legitimacy of the antiwar movement and the national experience of defeat in a discredited war had made it possible to recognize psychological trauma as a lasting and inevitable legacy of war."¹⁵ In fact, through the advocacy of Vietnam veterans, trauma

related symptoms were included in the Diagnostic and Statistical Manual of Mental Disorders in 1980 under the diagnosis Posttraumatic Stress Disorder (PTSD).¹⁶

Since then, one modality has emerged—the use of yoga, broadly defined—for treating trauma. Yoga is helpful for those who have experienced trauma as the yoga practitioner can shift attention from the mind to the body. That shift allows an individual to manage trauma without talking and safely release traumatic memories in the body.¹⁷ Injury and trauma may be physical, mental, or most likely, be related to one another in terms of one's ability to function in life. Posttraumatic stress psychiatrist Besel Van Der Kolk used yoga to treat trauma-related symptoms reported by a Vietnam veteran suffering from PTSD. The patient, a former medic, now serves as a yoga teacher and finds yoga practice helps him maintain a sense of control over his body and prevents his trauma from dominating his life.¹⁸ In practical terms, according to certified yoga therapy teacher, iRest, and Warriors at Ease teacher Renee Warren, a trauma sensitive class for a military population adjusts aspects of typical yoga instruction avoiding phrases such as corpse pose and surrender.¹⁹ This approach accommodates amputees, individuals with traumatic brain injury, and creates a calming and safe environment to provide benefits. Trauma sensitive yoga provides choices in poses that is particularly valuable for survivors of sexual assault and harassment. Additionally, daily practice and routine may be a factor in improved physiological and psychological changes, including accepting pain, the willingness to experience it, including associated emotions.²⁰

Trauma sensitive yoga and meditation allow for tending to moral injury. Moral injury is "perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations."²¹ Litz et al., identify self-

forgiveness, "Examination of maladaptive beliefs about the self and the world," as one of the treatment strategies in treating moral injury.²² *Vichara* is a phrase in Sanskrit for self-inquiry and *vikalpa* is a maladaptive response or reaction to life's circumstances, including life-defining moments such as trauma.²³ When this belief or patterning defines one's behaviors, one feels separate from a sense of meaning and the purpose of one's own life.²⁴ Identifying a *vikalpa* is an empowering approach as one can identify that patterning, and then choose to do something about it. Choice and agency are key tools for healing from trauma. When one identifies a *vikalpa* and one's life purpose, *dharma*, one can create a powerful new approach to healing.²⁵ Options for tending to moral injury include Acceptance and Commitment Therapy and mindfulness.²⁶ Similarly, yogic philosophy, yoga, meditation, and pranayama are part of a toolkit of complementary options; one can decide on a pose, how to breathe in that pose, experience himself/herself through that increased mind-body awareness, be aware of any feelings that arise during the *asana*, *pranayama*, meditation, and in a *vichara* practice. Through this witnessing process, one becomes more aware of anger and anxiety, manifestations of moral injury.²⁷ S/he can shift perspective from being a victim to being a survivor and demonstrate resilience, the ability to bounce back from adversity.

Systematic Relaxation and Yoga Nidra

Systematic relaxation approaches range from progressive muscle relaxation, to paying attention to the breath at the abdomen to bringing the mind to 31 or 61 points of the body, *shavayatra*, in Sanskrit.²⁸ Systematic relaxation can also combine points in the body with awareness of the breath, as in a practice known as 75 breaths, *shitili karana*. According to a preeminent yoga and meditation teacher Rod Stryker of ParaYoga, yoga nidra is when "the body is rest...while the mind remains fully conscious." It is "sleep, with

a slight trace of awareness...where neither thoughts nor images are present, and the practitioner experiences conscious, deep, dreamless sleep, possessing awareness of the surroundings—without either thinking about or interacting with them.”²⁹ As classically taught, Rolf Sovik describes yoga nidra as a process including five steps beginning with stretching; exercise without movement or what the author would term progressive muscle relaxation; systematic relaxation—(61 points) and (75 breaths); breath awareness; and the core of yoga nidra, conscious sleep.”³⁰ Yoga nidra takes the practitioner into alpha, beta, and theta states where one is asleep yet awake.³¹

iRest Yoga Nidra

American psychologist, yoga scholar, and co-founder of the International Association of Yoga Therapy, Richard Miller, adapted yoga nidra to a protocol called iRest, earning the endorsement of several leaders within military health care.³² iRest, integrative restoration, is a self-care healing approach that helps one get connected to himself/herself and life.³³ Robin Carnes, who studied with Rod Stryker and Richard Miller, incorporated iRest into a Walter Reed National Military Medical Center PTSD treatment program.³⁴ Lieutenant General (Retired) Eric Schoomaker notes:

iRest made substantial contribution to the recovery of deeply emotionally wounded veterans of a decade of armed conflict at the Walter Reed Army Medical Center in Washington, DC. Richard’s work and that of others in the yoga community led the Army Surgeon General’s Pain Management Task Force in 2010 to recommend these practices in the treatment of chronic pain.³⁵

Carnes co-founded Warriors at Ease, one of the most widely recognized programs that trains certified yoga teachers on how to adapt classes for active duty and veteran populations. Warriors at Ease specialized training and programs are trauma sensitive, military-culture informed, and evidence based.

Breathing

Several high stress professions utilize breathing techniques and behavioral scientists have studied the effectiveness. Lieutenant Colonel (Retired) David Grossman, in *On Combat*, explains the concept of autogenic training, a form of breath-focused meditation, termed tactical or combat breathing.³⁶ Tactical breathing is four rounds of the following pattern: four-count inhalation, four-count hold, four-count exhalation, four-count hold. He describes the experiences of first responders, service members, and victims of accidents using this breathing technique, as taught in the training. Tactical breathing, along with meditation and mindfulness is part of a comprehensive roadmap for resilience for service members and their families.³⁷ This pattern is one of the many patterns of *pranayama* (breathing) techniques taught in yoga. It is both *brahmana* (activating) and *langhana* (soothing); the holds after the inhale and exhale reinforce those two qualities.³⁸ Regulating one's inhale and exhale through the number of counts and holds can modulate one's response to a situation.³⁹ Rolf Sovik, a senior yoga teacher who is well versed in *pranayama*, writes that breathing is a healing tool and one that can be regulated.⁴⁰ A key benefit of breath control is control of the autonomic nervous system.⁴¹ In fact, diaphragmatic breathing and becoming aware of one's breath are two of the five stages needed for getting the mind still, as Sovik describes in his book *Moving Inward, The Journey to Meditation*.⁴² Grossman has taught his tactical breathing technique in a variety of high-stress or traumatic situations and environments including school shootings and said:

As a warrior, your concern is always to help others, and to do that you must be the rock of calm. When the whole world is coming unglued and all about you are losing their heads and blaming it on you, your job is to be that rock that others can anchor themselves to, and tactical breathing is one powerful tool that helps make this possible...as a warrior you must be

an example of calm, and in that capacity, you can and must pass on the calming benefits of this exercise to others.⁴³

Meditation

Meditation is the pinnacle of yoga practice, and it offers an opportunity for a service member to test his or her readiness and the connection between his or her body and mind through the breath. A daily practice of meditation allows a service member to monitor consistently where he or she is on the mind-body continuum and become more self-aware, through self-study, of which tools need more attention and time (yoga, *pranayama*, systematic relaxation, or yoga's sister science of Ayurveda, the basis for nutrition by living with the rhythm of life and the seasons).⁴⁴

Mindfulness

Mindfulness is a technique used by a wider variety of individuals than conventional wisdom would suggest. At a lecture at the U. S. Army War College, a four-star general officer shared that he practices mindfulness regularly and deeply believes that mindfulness plays a key role in building resilience. One definition of mindfulness from the University of Massachusetts Medical School's Center for Mindfulness (whose founding executive director is mindfulness expert Jon Kabat-Zinn) is "the intention to pay attention to each and every moment of our life, non-judgmentally" including "purposeful action, focused attention, grounded in the current experience, and held with a sense of curiosity."⁴⁵ The previously mentioned four-star general officer went on to note that mindfulness tools are critical to success in future warfare. That success is contingent upon a warrior being able to learn and systematically practice, mindfulness, or meditation. He also noted the need for psychological profiling for human factors, via

biological markers, to identify individuals with advanced capabilities. He noted that profiling would help the Joint Force to get ahead of PTSD.

A service member can practice yoga, systematic relaxation, breathing, meditation, yoga nidra, or iRest Yoga Nidra separately; however, the most effective sequence is yoga, systematic relaxation, breathing, and meditation--all informed by the breath. This sequence allows the mind to rest and enjoy the benefits of meditation. This sequence can be easily translated to a military environment, which places a premium on physical fitness and training. It could take place after a physical training (PT) session that might include cardio or strength training. A service member would wind down the active exercise with a few minutes of active stretching, (i.e., breath-focused yoga), lie down in a final relaxation for a few minutes, then conclude with a breathing or meditation exercise to integrate the benefits of PT and to be ready for the next task. Yoga Nidra and iRest Yoga Nidra can be done as stand-alone practices.

In fact, it is important to note that one specific tool, while necessary, may be not be sufficient. By way of context, several interventions have had promising results: mindfulness meditation, meditation through the repetition of mantra, yoga, and relaxation; however, each modality needs to be identified and tailored to the needs of the patient at the forefront.⁴⁶ What may be appropriate for a junior enlisted service member or West Point Cadet, say vigorous physical *asana*, may not be appropriate for someone who has served multiple combat tours; iRest Yoga Nidra may be more effective for the latter. For someone suffering from post-traumatic stress, s/he may need iRest Yoga Nidra combined with other modalities, including trauma sensitive yoga and meditation. One veteran suffering from insomnia and headaches described how these

practices helped him, “It's that hour I get once a week to knock the squirrel off that wheel in his cage going 100 miles per hour and actually relax for an hour without the use of prescription pills.”⁴⁷ And for all, a preventative approach of integrative health includes yoga, systematic relaxation, and meditation. A typical military model will not necessarily work, however. A former Marine says, “People who want to 'boot-camp-ify' their yoga have not been in the military...I heard of one group that advertised their yoga classes as blood, sweat, and tears....Is that what you want to give the military community? They've got that already. Wouldn't it be OK to just learn stress-management techniques?”⁴⁸

Current Program Structure and Policy Architecture

Service members, veterans, and their families practice yoga, meditation, and systematic relaxation on military installations and VA funded facilities globally, either in person, virtually (e.g., DOD-supported downloads such as those from the Navy and Marine Corps Public Health Center), or on their own at private gyms and yoga studios.⁴⁹ Anecdotes and vignettes about a service member or family member taking the initiative to teach yoga, systematic relaxation, iRest Yoga Nidra, and meditation at military installations, particularly in the Army, are fairly common. Service members may learn about, or access, these tools, through medical providers through (a) allopathic or conventional medicine or (b) complementary and alternative medicine (CAM). Integrative medicine bridges CAM and conventional medicine and denotes the relationship between the provider and the patient.⁵⁰ Providers from both conventional and CAM pathways recommend breath-focused yoga, systematic relaxation, and meditation to patients. Yoga, meditation, and relaxation are among the 10 most common complementary tools used among adults in the U.S.⁵¹ The National Institutes

of Health National Center for Complementary and Integrative Health is researching the efficacy of mindfulness meditation for service members and veterans.⁵² Service members and Veterans alike are increasingly using CAM modalities, including yoga and meditation.⁵³

The Undersecretary of Defense for Personnel and Readiness provided evidence of these tools' effects to the Chairmen of the House and Senate and House Armed Services Committees and the House and Senate Appropriations Committees in 2014:

- Yoga: Patients reported declines in psychological symptoms and improvement in overall health.
- Breath based practices: Patients were better able to remain sober and reduce overall stress levels.
- Meditation: Patients reported a reduction in anxiety levels and improved sleep.⁵⁴

Each of the services and the VA have taken unique approaches to introduce yoga, systematic relaxation, and meditation into their resiliency programs.

Comprehensive Soldier and Family Fitness (CSF2), the Army program, has three primary components, including online self-assessment, training, and evaluation. The program has five major dimensions of strength: social, emotional, family, spiritual, and physical.⁵⁵ One soldier noted “I definitely want to look into bringing my daughter [to yoga]...because it...really doesn't really cost anything [and] it's something that could help build a family together...”⁵⁶ One cannot understate the role of family in the military. The CSF2 program responds to several challenges—suicide, post-traumatic stress, and the rigors of modern military life.⁵⁷ The Performance Triad operationalizes CSF2.

The Triad focuses on optimizing health through sleep, activity, and nutrition; it includes spiritual health as well as soldiers' families.⁵⁸ The Triad program provides two

mobile applications to assist soldiers' breathing and mindfulness practice.⁵⁹ Meditation and yoga are among six CSF2 adaptive strategies: journaling, mentally reframing the issue, physical exercise, meditation and yoga, active problem solving, and talking to a trusted friend, chaplain, family member.⁶⁰ CSF2 options include yoga, systematic relaxation yoga nidra, and meditation via in person classes or via self-directed video.

The Army Public Health Center's Spiritual Health program provides additional articles on meditation.⁶¹ The Army Wellness Centers, located on installations, offer suggestions for stress management including biofeedback and stress relief skills.⁶² The Army Surgeon General endorses Yoga Nidra as a "tiered approach for the effective integration of Integrative Modalities to augment pain management."⁶³ These tools are not foreign to the Army.

Programs are taking place all around the world. The organization Warriors at Ease facilitates a robust, yet under resourced, yoga program at Schofield Barracks.⁶⁴ The Integrative Restoration Institute's systematic relaxation, iRest Yoga Nidra, had its origins at Walter Reed National Military Medical Center. iRest programs have subsequently taken place at 12 military hospitals and bases, 38 VA hospitals and at 49 non-military organizations, including Canada, UK, and Australia as of January 2018.⁶⁵ Dr. Amishi Jha (University of Miami psychologist and Director of Contemplative Neuroscience, Mindfulness Research & Practice Initiative) and Dr. Elizabeth Stanley (Georgetown University security studies professor, creator of the DOD-supported Mindfulness-based Mind Fitness Training (MMFT), and practitioner of Somatic Experiencing, a body-based trauma therapy) have evaluated meditation and

mindfulness programs for the Army and Marines. Dr. Jha's most recent research has been taking place at Fort Drum.⁶⁶

The Navy and Marine Corps Public Health Center provides an extensive set of resources to sailors ranging from relaxation, meditation, and breathing.⁶⁷ The Navy has further consolidated the range of available tools into a relaxation toolkit that has 12 breathing lessons, 9 progressive muscle relaxation lessons, 13 guided imagery lessons, 9 meditation lessons, 9 mindfulness lessons, and a set of catch-all modules including 10 combination strategy lessons and 10 special topics.⁶⁸ The Naval Medical Center in San Diego's downloads are unique in that they include instruction by fellow sailors. Offerings range from breathing, meditation, guided imagery, mindfulness meditation, progressive muscle relaxation, body scan, as well as Qigong.⁶⁹ It is unclear if these tools are used regularly or their impact on users has been measured.

The Air Force Reserve Command, like the Army, offers yoga and meditation classes.⁷⁰ Under the DOD Yellow Ribbon program, Reserve and Guard members have had the opportunity to participate in iRest Yoga Nidra.⁷¹ At the state level, the Connecticut National Guard has a yoga program.⁷² Walter Reed National Military Medical Center's Mind Body Program, at the enterprise level, complements these service-specific approaches.⁷³ Walter Reed's program consolidates these tools, including a useful home practice sheet that offers guidance on the relaxation response, positive psychology, mindfulness, yoga, and a suggested reading list.⁷⁴

Walter Reed has a very unique set of downloads that, from a Tantric Hatha Yoga school of thought, allow a practitioner to move his/her energy to achieve his/her desired outcome. For example, this set of downloads range from iRest Yoga Nidra to alternate

nostril breathing, two techniques that are well known for calming the nervous system.⁷⁵

Walter Reed offers daily classes Monday through Friday to its patients. The unique classes offered include adaptive yoga for those with limited mobility, injuries, and amputees and guided relaxation and meditation including the use of zero gravity chairs.⁷⁶

The VA's offerings in yoga, meditation, and relaxation range from programs on site at medical centers to literature available for further reading. The VA's War Related Illness and Injury Study Center Integrative Health and Wellness Program offers programs through various locations in the U.S; for example, the Washington, DC website offers relaxation and meditation downloads to its clients while the Palo Alto, CA location offers virtual and in person resources.⁷⁷ In one study at the Palo Alto location, patients who received yoga training, either in person, or in telehealth, showed equal benefits in terms of their symptoms.⁷⁸ Finally, just as incarcerated civilians can access these tools, meditation is authorized in military correctional facilities.⁷⁹

The Evidence: Research and Timeless Tools for Managing Stress in War

Existing research indicates that these tools are used primarily to treat veterans for pain management and post-traumatic stress. However, there is emerging evidence that these tools are increasingly used to treat active duty soldiers from an integrative health approach. Research on yoga and trauma sensitive yoga (Dr. Sat Bir Singh Khalsa of Harvard), systematic relaxation--iRest Yoga Nidra (Dr. Richard Miller of iRest), and meditation (Drs. Amishi Jha and Elizabeth Stanley) suggest that there is sufficient evidence for offering these tools in the Joint Force. A synopsis of this research, as well as the science related to yoga and meditation, could be a Ph.D.

dissertation, in and of itself.⁸⁰ As such, this section simply scratches the surface of the extensive literature that is available in this field.

Yoga

Khalsa's review of the literature indicates the following about yoga:⁸¹

- The effects of the relaxation response from yoga practice improve those genes linked to inflammatory response and stress.⁸²
- Yoga can improve mood.⁸³
- Yoga can improve one's tolerance to pain.⁸⁴
- Yoga increases blood flow to the brain in areas that are related to emotion and autonomic function.⁸⁵
- Yoga improves the ability to manage stress.⁸⁶
- Yoga can reduce perceived stress and back pain.⁸⁷
- Yoga can improve religious, spiritual well-being, which is part of CSF2, in the areas of connectedness, hope, and a sense of meaning.⁸⁸
- Yoga can reduce anxiety.⁸⁹
- And the bottom line is that practitioners report feeling better with their weight, energy level, and overall health.⁹⁰

Some highlights for the military include the following:

- Yoga has shown promise in military populations who are sleep deprived.⁹¹
- Yoga can prove useful in certain terrains in the land domain. A study with the Indian Army found that yoga was particularly useful at a high altitude; in fact, the Indian Army has an ongoing research program looking at the benefits of yoga.⁹²
- Areas for further research are the effects of yoga on heart rate variability.⁹³

Trauma Sensitive Approaches

Khalsa synthesized the literature on how trauma sensitive approaches – breathing, iRest Yoga Nidra, and Yoga – helps patients with PTSD.⁹⁴

- Based on improvements in the Clinician Administered PTSD Scale (CAPS), veterans with PTSD may benefit with yogic breathing.⁹⁵
- iRest Yoga Nidra for those suffering from PTSD showed a reduction in rage, anxiety, and emotional reactivity and increased relaxation, peace, self-awareness.⁹⁶
- Yoga has increase coping skills for children affected by war in Sri Lanka, Kosovo, and Lebanon.⁹⁷
- In combination with other treatments, yoga is an intervention for managing anxiety and depression associated with trauma.⁹⁸

The VA has found that: ⁹⁹

- (1) Mindfulness meditation has been useful in treating PTSD;
- (2) Meditation using a *mantra* (words that protect the mind) have been effective in treating depression, anxiety, and somatization;
- (3) Trauma sensitive yoga has helped in treating PTSD, depression, and chronic pain.

VA-supported research underway is testing whether a specific breathing meditation technique (Sudarshan Kriya Yoga) is effective in treating PTSD.¹⁰⁰

In addition, yoga has specifically supported the care of veterans with PTSD, as Khalsa noted, in his review of the literature:

- Yoga can support quality of sleep.¹⁰¹
- Yoga can reduce PTSD symptoms.¹⁰²

iRest Yoga Nidra

- iRest Yoga Nidra is particularly helpful for service members and their families as it complements existing therapeutic modalities, creates focus on the present, and leaves the practitioner with a feeling of success.¹⁰³
- iRest Yoga Nidra practitioners practice report improvement in depression, anxiety, stress, PTSD, chronic and acute pain, and insomnia.¹⁰⁴

- Through the practice, practitioners report complete (10%) or somewhat (85%) improvement in symptoms -- headaches, musculoskeletal pain, back pain, digestive difficulties, and a range of mental health symptoms.¹⁰⁵

Additional research is available on the iRest Yoga Nidra research website.¹⁰⁶

Meditation, Mindfulness, and Breathing

Meditation is more important than ever in an increasingly unstable world, for civilians and service members and their families alike, one rife with gun violence domestically, or the threat of war internationally. President Donald Trump said on November 6, 2017 that we have a crisis of mental health leading to gun violence.¹⁰⁷ The threat of violence in an overly connected age necessitates the need for simplicity, focus, and concentration.

- Marines who went through MMFT training prior to deployment showed improved ability to manage stress as measured by their heart rate and breathing rate.¹⁰⁸
- In writing about Stanley's research, a writer noted "Soldiers who are calm and focused in chaotic moments are less likely to fire out of fear or frustration—an advantage that's particularly important in counterinsurgencies...killing civilians can erode support among the very people whose cooperation is most needed."¹⁰⁹
- Stanley and Jha note that MMFT builds resiliency and ensures "faster recovery from cognitive degradation and psychological injury."¹¹⁰
- Mindfulness increases well-being, reduces emotional reactivity, and can improve behavioral regulation.¹¹¹
- Transcendental Meditation, mindfulness, and progressive muscle relaxation improved soldier resilience.¹¹²
- Overall, the research in meditation is ongoing, though it can support both personal and spiritual development.¹¹³
- In addition, regarding breathing, the *pranayama* practice of alternate nostril breathing, regulation of breath through the left and right nostril, can reduce blood pressure.¹¹⁴

In summary, tools of yoga have a multitude of benefits, for overall resilience, from fitness to mental health to physical health, line with CSF2.¹¹⁵

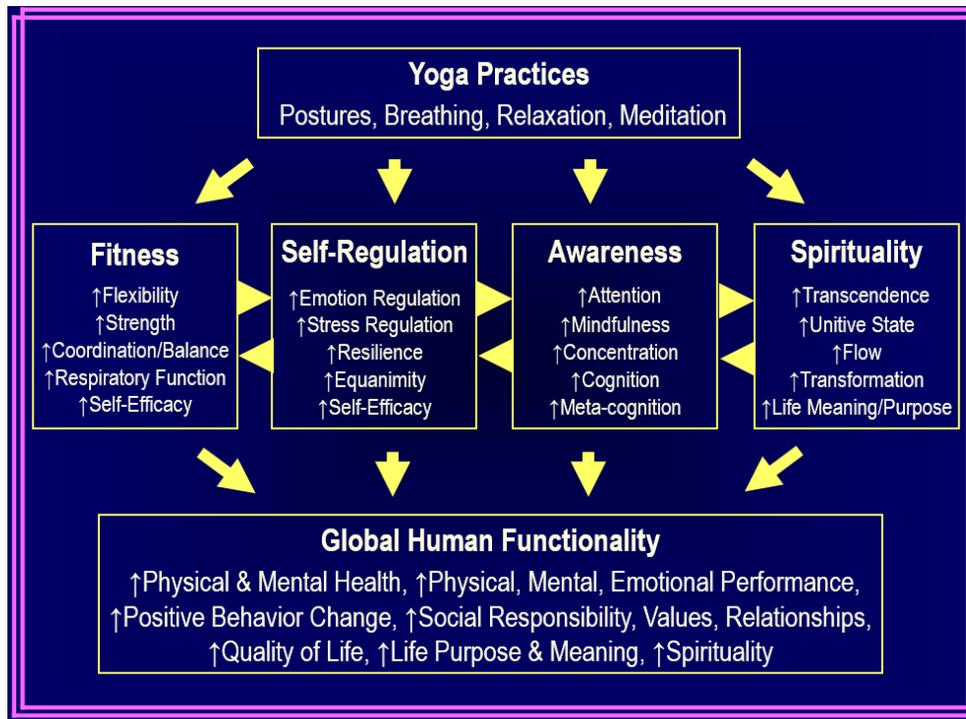


Figure 1. Summary of the Benefits of Yoga Practice Across the Resilience Spectrum.¹¹⁶

Timeless Leadership Tools and the Nature of War

These tools are timeless and the need for them is not new. War’s enduring nature is imbued with death and injury, physical hardship, disability, and psychological stress. As such, leaders should seek out and employ any tools that might mitigate the negative effects and boost protective factors, such as concentration, attention, quality of life, improved memory, and problem solving skills. Classical military texts support the argument that these tools are useful and time-tested rather than a passing fad. The practice of yoga, systematic relaxation, and meditation are classically supported when we examine theoretical literature about the nature of war and its relationship to soldier wellness and leadership. Carl Von Clausewitz described the essence of military genius

as presence of mind, strength of mind and character as being critical in this regard.¹¹⁷ A goal of yoga practice is the development of a clear, calm, tranquil mind.¹¹⁸ Clausewitz notes that a strong character is “one that will not be unbalanced by the most powerful emotions.”¹¹⁹ Yoga offers a way to observe emotions or thoughts without getting involved.¹²⁰ In fact, *pranayama* is a key tool in regulating emotions.¹²¹ Many observers have recognized a spark of leadership. For example, Clausewitz defines *coup d’oeil* (“glimmerings of the inner light which leads to truth”) combined with determination (“courage to follow this faint light wherever it may lead”).¹²² These two concepts are known as military genius, a foundation for military virtue. In a similar related vein, a commentary on *Yoga Sutra 2:52* is “the practice of *pranayama* destroys the veil that hides our intrinsic luminosity.”¹²³ Clausewitz states that stamina is one of the military virtues of the army.¹²⁴ In the yoga tradition, *sthira* is stability or steadiness, at the level of the body, as well as the mind, when not affected by fear or a sympathetic nervous system response.¹²⁵ And according to Clausewitz, when a general treats his subordinates with “benevolence, justice, righteousness...the army will be united in mind.”¹²⁶ The parallel yogic concept is *sangha* (community), which is supported by *cittaprasadanam*, a peaceful condition of mind and cultivation of these attributes.¹²⁷

Sun Tzu’s lessons on leadership to know oneself (3.31-33) are key for a general.¹²⁸ Through yoga, one can better understand himself/herself and to be able to know how to address a situation. In fact, a wise general, according to Sun Tzu, is able to change his/her approach based on the circumstances (1.7).¹²⁹ In fact, former U.S. Army War College (USAWC) Commandant Major General (Retired) Robert H. Scales noted that an understanding of the human element is critical; improved psychological

and physiological conditioning is one of the nine factors he identifies for defeating the adversary.¹³⁰ Managing an adversary or a difficult circumstance requires presence of mind and clarity of one's objectives. The yoga tradition similarly emphasizes that the key to living in the world successfully is knowing oneself and being able to recognize a situation. Compassion for peers or subordinates starts with full understanding, compassion for oneself, within the context of the operating environment.

Arjuna, the primary character in the *Bhagavad Gita*, a treatise on the hesitation of a soldier about to engage in battle, wrestles with performing his *dharma*, his duty. As Arjuna wrestles with the very difficult decision of whether to wage war against his family, not unlike the quandary that faced Union and Confederate troops in Gettysburg seeing members of their family on the other side, Arjuna comes to understand that performing his duty, his *raison d'être*, is service to his fellow soldiers. More specifically, he comes to understand, through a dialogue with his teacher Krishna, that to perform effectively as a soldier, that he must engage in the practice of yoga. In this context, *yoga* comes from the Sanskrit term, *yug*, which means to unite. To fulfill his *dharma*, his purpose in life, he needs to recognize his strengths and weaknesses. Arjuna's search is no different than the goals of spiritual fitness module of CSF2, "search for truth, self-knowledge, right action, and purpose in life."¹³¹ The tool that Arjuna learned would help him to integrate the unwanted or disparate parts of himself to align with his *dharma*, his calling, his purpose for being, was meditation. While meditation is the pinnacle of yoga, the most effective practice combines *asana*, *pranayama*, and relaxation sequentially, with varying intensity, frequency, and duration, based on a service member's own sense of self, to achieve more efficacious results (readiness and resilience) from meditation.

Similar to Clausewitz' virtues of "bravery, obedience, order, rule, method,"¹³² is Kautilya's guidance for a Prince, King, and Ministers including "self-control, which is the basis for knowledge and discipline. It is acquired by giving up lust, anger, greed, conceit, arrogance, and foolhardiness."¹³³ These classical theory of war texts, *in toto*, provide guidance for self-regulation, self-control, and discipline, for achieving the greater good and goal of the unit. The leadership principles laid out in these texts remind a service member of the importance of being ready and resilient in the face of combat. In fact, these classical texts, particularly Kautilya's *Arthashastra*, underscore that the rationale for these tools is not antithetical to the warrior spirit and ethos, in fact, they are central to them. Stanley writes

A true warrior must be able to still her body and mind to call forth strength; exhibit endurance during harsh environmental conditions; have awareness of herself, others and the wider environment so she can make discerning choices; access compassion for herself, her compatriots, her adversary and the locals where she is deployed; and show self-control during provocation so that she doesn't overreact. And yet, if the moment demands, she must also have the capacity to kill, cleanly, without hesitation and without remorse.¹³⁴

In fact, every warrior culture has rituals to prepare for battle and deal with its aftermath; as such, these concepts to create endurance are global, and simultaneously relevant to the modern military. Meditation, as referenced in the Gita, and the tea ceremony of the Samurai, are relevant cultural reminders of what has not changed in the nature of war: the need for resilient warriors.¹³⁵

The *Yoga Sutra's* references on *satya*, truth, (2.36) and *saucha*, purity of body and mind (2.40-41), and *virya*, courage (2.43) are not far from present day values in the U.S. military. For the average 18-year-old American private who has just enlisted and been introduced to the Army Values, he or she may wonder how to actualize his duty,

have self-respect, and demonstrate personal courage.¹³⁶ These classical texts on the theory of war, strategy, leadership, provide inspiration and guidance for the warrior spirit; and, the yogic texts provide the practical tools on how to be ready and resilient in line with these values. What has changed for the recently enlisted private is the character of war, most pronounced with technology in 21st century warfare. On a practical level, instead of giving up his or her attachment to a smartphone or tablet, the private can use an app to meditate or practice breathing or take a yoga class.

Technology and the Character of War

Yoga is beneficial because the mind needs rest in an increasingly multi-domain and technologically saturated battlefield and life. Stanley notes that a

technocentric culture has an underlying assumption that we can create, with more information or more precise technologies, a sense of certainty, control, and efficiency...when we have become so enamored with this approach and begin to buy into this illusion that we have certainty and control, life inevitably intercedes, and something happens that's a shock...The resilient approach acknowledges we're never going to be in complete control or have complete certainty, but we can build capacities that are adaptive for anything that happens.¹³⁷

While technology has changed the character of war, the tools and techniques at the individual level for managing the soldier's readiness and resilience as understood by Kautilya—dharma and yoga—are enduring, largely unchanged and necessary. These tools allow service members to be more ready for battle, resilient, adaptable, with improved quality of life and well-being. The modern military will be better postured to handle the changing character of war as more senior leaders embrace mindfulness. Specifically, these classical tools of yoga and meditation improve the mind, the very part that is under assault in a technologically rife changed character of war, as referenced by Stanley.

Evaluation of Arguments: For and Against the Yogic Toolbox

Implementing a unit-wide program involving yoga, systematic relaxation, and meditation or breathing exercises may seem impossible or undesirable to some commanders. Three main questions of teaching mandate, beneficiaries, and implementation frame the considerations for evaluating these arguments.

- Who teaches: Is personal commitment, from teachers, from the grass roots approach, combined with support from visionary senior leaders needed?
- Who is prioritized to receive the training? Do elite units such as Special Operations Forces (SOF) get prioritized over recently enlisted or commissioned service members?
- Is the best yoga program administered ad hoc or force wide? Should yoga be required, like physical training, or should it be a resource tool, like the Chaplain's services?

These considerations are part of five common arguments regarding implementing such a program: lack of time, increased cost, having unwilling participants, concern about yoga's "Eastern" origins, and structure. Each of these arguments can be easily refuted, and the potential benefits of implementing such programs are far greater than the associated cost and risk.

Time

Lieutenant Colonel (Retired) Benefsheh (Benef) Verell, a board member of Warriors at Ease, has proposed a way to implement mindfulness training in the Army.¹³⁸ This plan addresses the first concern that there is not enough time in the day or staff already burnt out by poorly designed and delivered training. Verell recommends MMFT as part of pre-deployment and post deployment training to include yoga, meditation, and iRest as part of daily physical training.

The second concern heard from colleagues at the USAWC is that poorly designed and delivered training routinely takes them away from their “real job” and, more specifically, does not meet the needs of their unit or their own individual needs. They characterize presentations as “death by PowerPoint” or “firehose.” The author concurs; he has observed slides with more than five words per bullet and more than five bullets on a slide, and very complex diagrams. Presenters say, “I will let you read the [dense] slide” and do not actually pause and give time for the audience to read and absorb. The author has observed that dense presentations do not achieve the intended learning outcomes. Colleagues have further said that training, whether it is about diversity, sexual harassment and assault, or resilience is “one size fits all,” which they resent as it is mandatory. There is concern that even resilience training, for example, does not provide much, if any, actual skill building.

There are two ways to deal with this set of concerns on resilience training and how to train effectively. First, as suggested by an Army colleague, every service member at some point in his/her career could participate in the two-week resilience course delivered through CSF2. This course provides state of the art training of trainers methodologies and content. Second, Master Resiliency Training (MRT) trainers who teach at the unit level should commit to teaching a certain set of hours prior to earning their additional skill identifier for course completion. They would better hone their skills in delivery and reaching their audience.

The first way forward, on the issue of time, is recognizing how to manage, and learn from, a resource-constrained environment. The competitive dynamic between quality and quantity impacts the time available to develop personnel for managing

stress, a necessary investment in readiness. The recent accidents involving the *USS Fitzgerald* and *John S. McCain* reveal the cost of not investing in circadian based rhythms, sleep hygiene, and balance.¹³⁹ It is critical is to pay attention to how yoga and meditation may be adapted in different domains and services, without regard to the person's rank, or physical duty station, as well as which practices are most helpful, as in the case of sleep deprivation. Yoga nidra is particularly helpful for insomnia. Machinist's Mate First Class Preston Tharp said, "Regular yoga helped me to become more introspective, and through that, I was able to become a calmer, more positive person."¹⁴⁰ Reduced anger, improved ability to relax, and greater efficiency at work can help any service member.

A second way forward is how a senior leader can invest his/her time wisely. The best thing a senior leader can do is to invest time in his/her subordinates. During World War II, American psychiatrists Abram Kardiner and John Spiegel observed that not only would men not get used to combat, but also what was the "strongest protection...was the degree of relatedness between the soldier, his immediate fighting unit, and their leader."¹⁴¹ With a motivated and willing unit, a leader—who invests in his/her service members with genuine interest in resilience and readiness—has an opportunity to create meaningful training and wellness opportunities.

Can a senior leader draw on the yogic toolbox? Yes. For example, each time a service member stands at attention, he is doing a variation of the pose *tadasana*, or mountain pose. In that moment a soldier can become aware of the four corners of the feet, lift up through the sternum, relax the shoulders, and feel like his/her head is gently lifting as if being pulled by a string from the ceiling. He/she can next pay attention to the

breath. As such, focused on body and breath, he/she is ready to receive and accomplish the tasks for the day from a more relaxed and resilient state, connecting to mind and body through breath. This quick scan of the body, paying attention to any tension in the body, and relaxing through the breath requires just 15 seconds, for a skilled practitioner. Lieutenant Colonel Kerry Story of the U.S. Army Medical Command led a successful yoga program in collaboration with Tony Garcia, the program manager of the CSF2 program in Europe. Story identifies four potential opportunities for including training in body awareness: (1) a safety briefing, (2) closing out a formation before a long weekend, (3) before the start of a meeting (command and staff as well as commander briefs), (4) during introductions, ice breakers, and transitions in existing training. As the lead of a joint planning exercise for a course on Theatre Strategy and Campaigning, the author conducted a short body awareness and breathing exercise followed by individual and team goal setting. He asked the seven participants about their reactions to the exercise. All of the participants appreciated the meditation and visualization. They said they felt more relaxed, focused, and ready to start the joint planning exercise because of that short training.

A third way forward is that the investment of time outweighs long-term health care costs that could otherwise be avoided, as found in one study among the civilian population. “[It] has minimal risk, minimal cost and yields substantial benefits for patients with a wide variety of illnesses.”¹⁴² Schoomaker, a senior instructor at the Uniformed Service University and the former Army Surgeon General, endorses these CAM options, including yoga, to manage chronic pain and reduce dependence on opioids.¹⁴³ That could address part of concern identified by Senator McCain. As Robin

Carnes said, “Soldiers are hungry for real healing--more than pills or a quick fix.”¹⁴⁴ In fact, from another study, “To reverse antipsychotic medication–associated weight gain, yoga as an acceptable form of exercise as well as a plausible adjunctive therapy for the treatment of mental illness, particularly in the reduction of anxiety and depressive symptoms.”¹⁴⁵

A fourth way forward is to get creative, and find time particularly at larger headquarters and garrison units that do not have regularly organized PT, weapons qualifications, or maintenance of vehicles. At such locations, Verell recommends monthly sessions. For the guard and reserve, she recommends including yoga, relaxation, and meditation during their training, “As part of PT, maintenance, and weapons qualification—same as the active duty line units.”

Cost

The first cost is hiring teachers, a cost that can be mitigated in the short term by drawing on the talents and skills of current instructors in the force. Using those instructors, however, creates an additional cost in manpower when they are taken away from their duty position to instruct. The first way forward that is required is the willingness and confidence of the leader to support an individual who is trained to teach to a military population. A commander in the 25th Infantry Division supported permissive TDY for the unit behavioral officer to complete yoga certification. “Low-cost, high impact programs (like yoga) only need leadership that believes in them,” said Lieutenant Colonel Jason Davis.¹⁴⁶ Captain Courtney Fox said the alternative was to “burn leave the whole time.” Now being certified, Captain Fox says she will likely start a yoga program when she next has a permanent change of station.¹⁴⁷ Another benefit of

drawing on the existing talent pool to teach is the decrease in PTSD symptomology when a peer, who also has had combat experience, leads a class.¹⁴⁸

A second way forward is supporting those who are interested in learning to teach; these costs are also manageable.¹⁴⁹ There is value added considering \$50 billion spent on the Military Health System.¹⁵⁰ For the active duty Army strength of 483,000 people, two teachers per brigade could be trained at the minimum 200-hour level in yoga and meditation teacher training. Considering 4,500 soldiers make up a brigade combat team; that would mean training 200 soldiers in yoga and meditation. Rough estimates for training 200 teachers in a modestly resourced, bare bones 200 hour residential program would cost \$5,000 plus \$1,000 for additional military focused, trauma sensitive, evidenced based training by Warriors at Ease; that total, for one service, for example, would cost the Army \$1,200,000.

A second cost related concern, given the nature of permanent change of station of soldiers in the Army, movement of units, and the challenge for the Army's Human Resources Command in backfilling empty specialized skills that are not a primary function of the army, is that contracting would be necessary. As such, a way forward as a short-term solution, is that a contract could address the qualifications needed for hiring instructors and include a train the trainer component, such that over time, more soldiers would be able to teach others.

A third cost related concern that comes up is that there is a cost in maintaining training that does not achieve its intended goals and has skeptics. Despite the good intention of using the content to foster discussion, the quality of trainers for MRT varies. Trainers default to another typical "death by Powerpoint" made more cumbersome as it

is over 14 modules. Of greater concern, there is no practical, ongoing skill based training as offered in a yoga, systematic relaxation, or meditation class. A way forward is to focus on the spirit and intent of MRT as originally designed and as described earlier in the time section.

To sum up, breathing, reaching down and releasing the back, or listening to one of the approved, existing downloads from the services is a manageable cost to a unit as these downloads are already available and taking a few seconds is an investment in readiness. That simple, individual choice to relax, those ten seconds, requires self-awareness, discipline, and self-regulation. Instead of a cost, that is an awareness of the importance of resilience for readiness. From a cost savings perspective, these qualities are important markers in psychological health.¹⁵¹

Participation

The third argument regards participation. On individual resistance, the question is to what extent an individual is ready to learn and then to implement, systematically, what s/he has learned. First, some argue that male service members may not be inclined or willing to voluntarily to participate in yoga, systematic relaxation, or meditation, especially if they are only familiar with these tools from media representations of yoga, which tend to focus on women. This argument is not unlike the concerns of civilian men in civilian yoga studios. Verell notes that what male soldiers have seen as “yoga” comes from pictures of advanced *asana*, as seen in magazines or the TV; she notes “the media glamour of yoga is what they see and assume it's not for them because they are not flexible.”¹⁵² The statistics of women outnumbering men in the yoga studio would likely balance out in a military environment, one known for its emphasis on diversity and equality. In fact, it may be a moot point as inclusion and

promotion of women in the services is an ongoing challenge.¹⁵³ The reason for that disparity is that it remains a largely gendered space.¹⁵⁴ However, resilience, readiness, and the effects of trauma are ones that cross gender lines. In fact, male service members have benefitted from these tools. Gender disparity is one that is manageable; Story found in yoga classes she taught, she had close to a 50/50 split between men and women.¹⁵⁵

A way forward for addressing male participation is to amplify testimonials from male senior leaders. An example of a testimonial is that of Lieutenant Colonel (Retired) James Alden, who served in the SOF, and said

My meditation and yoga practice became more and more critical to my combat effectiveness with every deployment...while not commonly referred to as 'combat skills,' [it] forced me to understand how my environment impacted me...Meditation helps me connect with my emotional self and my environment. Yoga helps me to connect with my physical self, my body and my breath...It reminded me that I was called to be a Warrior and my responsibility as a Warrior was to aggressively protect and defend; and then, bring back the lessons of war to my community...¹⁵⁶

His testimonial underscores the importance of yoga, systematic relaxation, and meditation at the individual level.

The second concern regarding participation is, as Major Brian T. Gregg of the Senior Leader Sustainment Program at the Dunham US Army Health at Carlisle Barracks, points out, that individuals are more interested in training if it is tied to performance. Major General Walter Piatt, commander of the 10th Mountain Division at Fort Drum said that just as soldiers see benefits from physical fitness, they would "go after [these tools] with a hunger...when they see results they make time for it [as] they see the benefits."¹⁵⁷ The General said once soldiers see that result from mindfulness and meditation, they will want to see it included in basic training. A good yoga,

systematic relaxation, and meditation program targeted to the audience will see the expected benefits.

Third, because participation is based on the individual and his or her own sense of self, fitness, and wellness, it may be difficult to imagine a program that meets the needs of all service members, civilian employees, and dependents. At the same time, research suggests that these individual benefits will aggregate, and that the benefit of such programs may also accrue to units. A case in point comes from a study led by Jha and Stanley who offered mindfulness meditation training, as part of the toolbox for preventing and managing PTSD. Marine reservists in Iraq, who went through the training, reported less stress and anxiety and improved memory.¹⁵⁸ The results were reconfirmed in a follow up study with Marines at Camp Pendleton. Individual readiness and resilience is related to unit readiness and resilience. The readiness of the Force would be improved if these tools were used during pre-deployment and deployment, to reduce overall disease burden and increase readiness of the force.

Eastern Traditions

The fourth argument that is raised with these yoga-related tools is that yoga is either part of Hinduism or part of a foreign set of Eastern traditions and philosophies. Yoga is part of a set of seven Indian philosophies including Buddhism, Nyaya, Vaisheshika, Sankhya, Yoga, Mimamsa, and Vedanta.¹⁵⁹ Most Hindus do not practice yoga, as described in this paper, and as funded by the DOD, at all.¹⁶⁰ At its core, as in the second aphorism in the *Yoga Sutra*, 1:2, yoga is about stilling the mind. The four volumes of the *Yoga Sutra*, as well as the *Hatha Yoga Pradipika* simply expound on this notion that the use of physical poses, with breath, allow a practitioner to better still his/her mind. Yoga simply allows a practitioner to see himself or herself as part of

something bigger, humanity, the planet, the universe, as some may define spirituality, which is not necessarily religion.

Additionally, most of the world's religious traditions also have meditative or contemplative practices—Christian contemplative tradition, made famous by the Jesuits and Quakers, mysticism from the Kabbalah, Vipassana in the Buddhist tradition, and Sufism in Islam. The tools in this paper, particularly meditation, are common to all faith-based traditions. It is sufficient to say that a secular practice of breath focused stretches (yoga), systematic relaxation, and breath focused meditation strengthens and complements any faith tradition rather than takes away from it. Meditation is part of a holistic package for strengthening resilience and optimizing force readiness.¹⁶¹ In fact, from a spiritual perspective, the tools of yoga are already integrated in the CSF2 program.¹⁶²

Second, while yoga has been practiced for thousands of years, it already entered American consciousness in four distinct phases, usually connected with specific teachers. These were (1) Swami Vivekananda during the 19th century, (2) Paramahansa Yogananda in the early 20th century, (3) Swami Rama and BKS Iyengar in the early 1960s, and (4) a plethora of teachers in the past 30 to 40 years including Pandit Rajmani Tigunait and Rod Stryker in the 2000s. Yoga became more visible in the 2000s to the Joint Force through the iRest Yoga Nidra protocol. Service members, largely male, participated in this healing modality, as seen in powerful vignettes in the short film, *A Soldier's Story* and feature length film, *Escape Fire*.¹⁶³

Structure

The fifth argument is about structure. The key question is whether leaders are ready to take on the organizational challenge of incorporating these cost-efficient tools

across the Joint Force. In fact, the four-star general officer referenced earlier expressed concern that despite research done by both the Army and the Marines, mindfulness work is scattered and not yet been scaled up even to reach the size of the Marine Corps. One way to ensure institutionalization takes root is for senior leaders to share stories of success stories of where mindfulness training has worked. Messaging and leadership support make a difference. Major General Walter Piatt recalls a split second decision made by a soldier trained in mindfulness where the decision not to shoot resulted in the cooperation of Afghan village elders and did more for mission accomplishment than any act of force the soldier had applied earlier.¹⁶⁴ Mindfulness training can support time sensitive decision making when an individual is about to make a kinetic decision. Amplifying that story and repeating it across the Joint Force is critical.

Another way to tackle the issue of structure, short of having a formal unit managing an initiative, is to develop creative approaches, such as a train the trainer program. Story launched a train the trainer program for noncommissioned officers, officers, and civilians. Through the program, students learned basic yoga poses, how to adapt yoga to the military context, meditation, trauma sensitive yoga, and iRest Yoga Nidra. She created an incentive structure; soldiers earned promotion points and their participation was recorded in their official personnel file. For sustainability, she required each student to teach eight volunteer hours at their unit level within six months of completing their training. Her approach is one way to institutionalize these techniques. She notes “having been involved with this [program] over the past two years, and seeing the results, we have so many opportunities to perhaps change the outcomes of how Soldiers deal with stress/trauma, etc. as they face these challenges instead of

working to fix the damage after it's occurred (as we have and currently do in our Veteran population).”

Through her program’s survey instrument, Story found that 80% of her students improved their stress level, overall perspective on life, and became more mindful about self-care. Over 70% began to use breathing to reduce stress and anxiety while over 70% noted some, much, or major difference in themselves as an Army leader. Over 60% improved their quality of sleep, and over 50% improved the amount of time they slept and were more deliberate in the choice of food they ate. Almost 50% improved their relationships with their significant other, family members, and were able to return to sleep more effectively.¹⁶⁵

Recommendations for Organizational Cultural Change

Stephen J. Gerras, Leonard Wong, and Charles D. Allen summarize Edgar Schein’s *Corporate Cultural Survival Guide* and suggest that embedding and reinforcing mechanisms are ways to change an organization.¹⁶⁶ Six embedding mechanisms and six reinforcing mechanisms provide an outline, organizationally, for how yoga, systematic relaxation, and meditation may be scaled up across the Joint Force.¹⁶⁷

Embedding Mechanisms

The first of the six embedding mechanisms is “what leaders pay attention to, measure, and control on a regular basis.” Leaders across the force, and at all levels (noncommissioned officers, general officers, field grade officers, and company-grade officers), should send the message, speaking from personal experience, conviction, and evidence, like the four-star general officer referenced earlier, about the need for a protocol of yoga, systematic relaxation, breathing, and meditation. When a commanding

officer or others in their chain of command practice yoga, systematic relaxation, or meditation it sends a message about cohesion and working in a team.¹⁶⁸

The second mechanism is “how leaders react to critical incidents and organizational crises.” In response to a critical event, the chaplain or another leader could reinforce non-denominational, secular, yogic tools and invite the audience to simply pay attention to their body and breath. Participants could take a moment to recognize those they have lost, or they may focus on their own wellness, by concentrating on the mind-body connection, through the breath, without any religious connotation. Third, is “how leaders allocate resources.” As demonstrated in the cost section, it is possible to build on existing yoga programs taught at military installations. Fourth, is “the leader’s use of deliberate role-modeling, teaching, and coaching.” When voices at all levels—from the four-star general officer referenced earlier to Captain Inle to a SOF soldier like Alden—are heard and emulated, subordinates will be inspired by their own resilience and will want to emulate them—for the unit’s and their own readiness. As observed by academics and service members, when commanding officers participate side-by-side soldiers, sailors, airmen, and marines, they send a strong message that leadership believes in these tools. Service members appreciate general officers or others in the chain of command joining them in class.

Fifth, is “how leaders allocate rewards and status.” If a teacher is successful and a yoga student has shared a testimonial on improved resilience, that vignette could become part of an officer evaluation report and promotion package. Story recommends (1) ensuring yoga and meditation activities are coded as short courses when meeting the requirement of 40 hours so service members could earn promotion points for

completion and (2) ensuring that such participation is included in officer evaluation reports and record briefs; both changes will provide incentives to service members to participate. Sixth, is “how leaders recruit, select, promote, and attrit personnel.” Recruitment, retention, and attrition must embody the values the services espouse. A former Marine stated, “The vulnerable parts that the Marine Corps did its best to squeeze out of me were the parts I least wanted to explore—the parts that were preventing me from healing.”¹⁶⁹ A well-designed program needs to take into account those that may feel forced to leave. As General George W. Casey, Jr. noted, a good CSF2 program is tailored to the needs of an individual.¹⁷⁰

Secondary or Reinforcing Mechanisms

Gerras, Wong, and Allen also summarize six secondary or reinforcing mechanisms. The first is “organizational design and structure.” Service members report feeling better when other students in a yoga class include general officers and others in their chain of command. Second, is “organizational systems and procedures.” The CSF2 program is housed in Army operational and leadership (vs. medical leadership) in an effort to be understood as a training program.¹⁷¹ That sends a message that destigmatizes resilience tools. Following PT, based on time, the opportunity, the venue, size of unit and interest of the leader or of a participant, an ad-hoc or purposeful few minutes could support best practices from sports physiology recovery after exercise. Alternatively, a senior leader may, at the start of the meeting, based on the body language of the participants in the meeting, context, and topic at hand, take 30 seconds, at the start of the meeting, to allow participants to become aware of their body and just breathe.

Third, regarding “the design of physical space, facades, and buildings,” new construction may consider the best of architectural design that inspires, fosters unit cohesion, and reflects the principles of resilience. A mentality of "embrace the suck" and "get over it" may reinforce the belief that worse the working conditions, the more spartan, the more isolated, the more uncomfortable, the better. The alternative perspective for new construction, particularly, is that sunlight, nature, access to windows, whether drawn from Chinese Feng Shui, Vedic Vastu, or green principles of recycled material such as Leadership in Energy and Environmental Design certification standards, reinforce values, in an organization that is committed to accessibility, universal design, positivity, and passion. Weather, location, and security permitting, in older spaces or in the field, service members may practice yoga and meditation outdoors or in indoor spaces that are inspiring, reinforce values, and are conducive to unit cohesion and improved morale.

Fourth, on “the use of formal statements of organizational philosophy, creeds, and charters,” while existing policy frameworks already speak to CSF2 and resilience, senior leaders need to repeat those principles more regularly.¹⁷² Amplifying these messages of resilience, health, wellness, and readiness necessitate simultaneous amplification from the Morale, Family, and Welfare, Installation Commands, U.S. Army Training and Doctrine Command, and CSF2 Fitness leadership.¹⁷³ Engaging other key stakeholders such as the Chaplain Corps and U.S. Army Medical Command (MEDCOM) is also critical to ensure that the spiritual and medical components are all tied together.

Fifth and sixth, “Rites and rituals of the organization along with stories about important events and people,” is an opportunity to emulate the second embedding mechanism. In particular, a senior leader and chaplain may encourage out of the box thinking for creating an event that is fully inclusive and welcoming for those that are atheist, agnostic, spiritual, or do not identify with a religion, including those that do not identify with one of the Abrahamic faiths. For example, leaders should ask service members to take a moment of gratitude during a moment of silence. He/she may say “listen to your body, quiet your breath, and take a moment of gratitude.” That may cue those in attendance of the importance of these yogic tools of resilience. In such an opportunity, no service member need feel compelled to bow his head or utter the word amen – or feel any one particular religion is compromising his/her deeply held beliefs. He/she simply has to connect with his/her own breath, body, and mind for readiness, resilience, and bolstering his/her own understanding of spirituality, part of CSF2.

These embedding and reinforcing mechanisms come to life when an institution, a military base or VA hospital take simple steps. These including (1) endorsing a teacher, (2) seeing service members practice side by side their commanding officer or others in their chain of command, and (3) communicating and coordinating with a host of stakeholders. Those who are already engaged and interested in supporting these tools include Morale, Family, and Welfare, which already offers yoga and mindfulness training, and Walter Reed and other military commands that have made downloads available for those not able to participate in person.

Principles for Implementation

Changing the Army, or the Joint Force, through these embedding and reinforcing mechanisms does not require the intense time and resources of the joint requirements

process, particularly on the light touch approaches. It simply requires the willingness to change at the individual level, understanding the environment, concerns of stakeholders, taking a calculated, informed risk for scaling up these tools to larger units. Robert F. Kennedy, in 1996, said, “Each time a man stands up for an ideal, or acts to improve the lot of others, or strikes out against injustice, he sends forth a tiny ripple of hope, and crossing each other from a million different centers of energy and daring those ripples build a current which can sweep down the mightiest walls of oppression and resistance.”¹⁷⁴ Creating change at the grand level is quite inspirational; a simple act is possible.

Organizational and cultural change requires senior leaders in the Army and elsewhere in the Joint Force to take some risk, and start down a path of embedding and reinforcing mechanisms. When his/her senior leader peers are also willing to embrace embedding and reinforcing mechanisms, true, sustainable change can occur. From a bottom up perspective, it means a service member or family member, who may be a yoga or meditation teacher, takes initiative at the level of the individual to teach at military installations. From a leadership perspective, encouragement and support for that individual teacher is critical. Leadership is a two way process, a conversation among all levels, across all levels of the enterprise, for a better-trained force, for service member, and family alike.

As such, the DOD—and commanders, who are in charge of the climate, morale, readiness, resiliency, and training of their units--need not fear any of the five arguments outlined—that yoga takes up time, is costly, is for women, or that it is religious (or owned by one particular religion), or cannot fit within the existing structure. In fact, they

should embrace these modalities as additional, valuable tools to improve both individual and unit performance, readiness, and resilience.

The themes for implementing these recommendations in the Joint Force are the following:

Short Term Approaches

- Institutionalizing these mindfulness tools require service chiefs, general officers, field grade officers, and NCO leadership to amplify the track record of success of these tools. The Chairman of the Joint Chiefs of Staff Joseph E. Dunford, Jr. reinforced the importance of mindfulness in the 2017 defense budget request and he should reiterate it under this current administration widely across the enterprise and encourage service chiefs to do the same.¹⁷⁵
- These senior leaders need to amplify the existence of existing yoga, systematic relaxation, and breathing programs taught by service members, family members, and civilians at installations. Social media offers the opportunity for any risk-averse leadership to float these ideas—encouraging their troops to participate in a yoga training activity for increased readiness and resilience. Following their lead, general officers and field grade officers must re-emphasize and amplify these principles of the utility of yoga and meditation for wellness and encourage company-grade officers to do the same.
- Improve lines of coordination & communication of these programs that exist in the Joint Force. Ongoing support from key stakeholders—Morale, Family, and Welfare, Installation Commands, MEDCOM, Chaplain Corps, Comprehensive Soldier and Family Fitness—as well as all involved in resilience—will support leadership.¹⁷⁶
- Senior leaders must participate in these programs, alongside their peers, subordinates and their own bosses to foster unit cohesion and morale.
- Take simple steps, like piloting a few minutes of breathing or stretching or silence in any existing training or at the start of a meeting.
- Create an exhaustive inventory of the evidence base. The author has scratched the surface and referenced just a few of the many evidence based research pieces, journal articles, vignettes, and testimonials that he has collected and are otherwise available, for example from journals like *Military Medicine*, which are constantly coming out with new articles on yoga or meditation.

- Cite the efficacy of these tools regularly and relate it to the audience. Brigade Psychologist Captain Courtney Fox notes that she will explain the benefits of yoga through the lens of sports physiology. “When I explain to Soldiers that a lot of the skills in yoga are the same skills that professional athletes pay thousands for people seem to be more receptive to it.”¹⁷⁷

Mid Term Approaches

- The change of Administration is an opportune time for all services to iterate CJCS’ view on the importance of these tools and express interest to stakeholders on the need for updating their fitness and resilience guidance.
- In 2013 then Secretary of the Army John M. McHugh and Chief of Staff Raymond T. Odierno signaled their intent to update the Comprehensive Soldier and Family Fitness regulation.¹⁷⁸ The CSF2 Guidance, 350-53, issued in 2014 did not explicitly mention these yogic tools.¹⁷⁹ Any updated guidance should include yoga, breathing, systematic relaxation, and meditation.
- Update the physical Physical Readiness Training (PRT) doctrine (FM 7-22) to include evidence based yoga, relaxation, and meditation as authorized training modalities that support injury prevention, rehabilitation, and health promotion.
- Draft detailed guidelines drawing on the existing literature mind-body programs in military health care settings for designing effective yoga, systematic relaxation, and meditation programs¹⁸⁰
- Include yoga, systematic relaxation, and meditation as part of pre deployment training. Include iRest Yoga Nidra and essentials of sleep hygiene so service members have tools to be able to sleep when deployed.¹⁸¹
- Include these tools in Professional Military Education at the Senior Service Colleges.¹⁸²
- Observe existing yoga and meditation programs known as “Inspiring Resilient Warriors” at U.S. Military Academy West Point and “Modern Warriorship” at Virginia Military Institute, with an eye to recruiting the next generation of mindful officers¹⁸³
- Tailor programs to the audience, including recognizing the unique needs of survivors of sexual assault.¹⁸⁴

Long Term

- Create inventory of existing yoga, trauma sensitive yoga, systematic relaxation, iRest Yoga Nidra, meditation, and breathing programs and

research on those programs, whether at military installations or through the VA.

- Resource existing yoga, systematic relaxation, iRest Yoga Nidra, breathing, meditation programs that are evidence-based, military focused, and trauma sensitive.
- Review the Global Assessment Tool to more effectively incorporate the positive benefits from yoga, systematic relaxation, and meditation programs
- Coordinate with the VA to fund new research to address concerns identified in meta-analyses that found methodological weaknesses in yoga, systematic relaxation, and meditation research by using a variety of research techniques, including qualitative, and questionnaires suited to the population¹⁸⁵
- Convene expert group in partnership with the VA, researchers, and NGOs to identify illustrative biological markers for measuring resilience, as a psychological profile, to determine advanced capability in a service member. Illustrative markers include breath rate, heart rate recovery, and heart rate variability.¹⁸⁶

Conclusion

There is a need for yoga, systematic relaxation, and meditation not only in the Joint Force and in Veterans populations, but as part of coherent, comprehensive national security framework.¹⁸⁷ Not only do we need these services for government officials, we need them for those whom we serve--for example stakeholders working side by side the U.S. government on the frontlines, whether in human rights, or humanitarian assistance.¹⁸⁸ “The greatest threat to national security today is the unconscious belief in our culture that humanity is our weakness rather than our strength,” according to Stanley. “That belief drives our resource allocation priorities rather than training in core capacities and trusting individuals.”¹⁸⁹

Senior leaders across the Joint Force indicate a willingness to change the culture around mindfulness like the four-star general officer referenced earlier. They simply need to hear other leaders who believe in mindfulness training, like General Piatt, who

said that the most powerful weapon is the soldier's mind itself. Once fellow commanders, like Piatt, see how these tools impact their own life, and can share their stories of units' improved readiness and resilience, the Joint Force will adapt these cost conscious measures to create a more ready, resilient force capable of identifying and defeating the adversary, working with our partners, and protecting America's vital interests, at home and abroad. It is time to set aside resources for yoga, systematic relaxation, and meditation programs. The state of our service members' minds for building Joint Force readiness is at stake.

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¹⁸² Should this paper be of interest to the senior service college community, one way to continue the conversation might be a convening day-long symposium -- a mix of classroom, seminar style learning, plenary lecture, and actual practice of yoga, systematic relaxation, and meditation. Based on this research, the learning component could include an introduction by Lieutenant General (Retired) Eric Schoemaker, the former 42nd U.S. Army Surgeon General and Commanding General of the U.S. Army Medical Command to set the stage on leadership. Dr. Sat Bir Singh Khalsa of Harvard Medical School could give the keynote speech on the state of art on yoga research, followed by iRest Yoga Nidra Founder Dr. Richard Miller and Dr. Amishi Jha of the University of Miami on meditation. These four could be followed by a panel on implementation including Robin Carnes, who spearheaded the iRest Yoga Nidra at Walter Reed and Lieutenant Colonel Story, profiled in this paper. The practicum segment would complement the theory drawing on powerful instructors who embody and live these teachings such as Rod Stryker and Robin Carnes. Select articles cited in this SRP could be provided to students as required, focused, or suggested reading. Key discussants to stimulate conversation could include Dr. Elizabeth Stanley of Georgetown University, Warriors at Ease board members Benef Verell and Renee Warren, and service members and veterans who have been touched by yoga's benefits for themselves or their families. As such, this SRP could be "brought to life" for all senior service college students in a day long symposium with Bliss Hall lecture, practice, and dialogue in seminar. Such an approach would provide a practical way of implementing key lessons learned in the USAWC Master of Strategic Studies core curriculum, in strategic leadership (self-awareness, leading organizational change and vision, organizational culture and leadership, command climate, and team building). Students could understand the science, see how these tools impact them on a visceral level, and discuss how to embed and reinforce these tools across the Joint Force.

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¹⁸⁶ Based on a conversation with Major Brian T. Gregg on August 28, 2017, Heart rate recovery measures the ability of the body to bounce back from stress and heart rate variability is a measure of the ability to respond to stress. Practical measures include nutrition, sleep, and regular exercise, to improve this state of calm and ability to be vigilant and ready. A readily implementable tool is normalizing breathing, equalizing inhalation and exhalations. One pattern is inhaling for six counts and exhaling for six counts, up to 5 rounds in one minute, totaling five minutes, or 25 total rounds. The Senior Leader Sustainment Program at Carlisle Barracks Biofeedback program recommends a five-minute breathing practice daily; it is one way that a civilian or service member can practically embody (and set the foundation, at the level of the body, breath, and mind) for cultivating the qualities that Clausewitz identifies necessary for a strategic leader.

¹⁸⁷ Members of Congress are also engaged in these modalities. “Congressmen Tim Ryan and Tony Cardenas (D-California) formed “The Quiet Caucus,” offering a weekly group meditation for interested members of Congress. A separate weekly meeting is held for congressional staffers.” Warriors at Ease, “Mindful Meditation on the Hill” linked from the *Warriors at Ease Home Page*, <http://warriorsatease.org/news-press/mindful-meditation-on-the-hill/> (accessed March 11, 2018).

¹⁸⁸ The need for yoga, systematic relaxation, and meditation exists globally. For example, Frida the Young Feminist Fund, “Tracing a Young Feminist Activist’s Self-Care Journey,” August 29, 2017, linked from the *Frida Home Page*, <https://youngfeministfund.org/2017/08/tracing-young-feminist-activist-selfcare-journey/> (accessed April 17, 2018), is working with front line human rights defenders Armenia. The need is particularly great for those at the very margins of society; 74.3% of intersex groups and 76.5% of trans activists reported needing resources to manage trauma and burnout, American Jewish World Service, Astraea Lesbian Foundation for Justice and Global Action for Trans*Equality, *The State of Intersex Organizing: Understanding the Need and Priorities of a Growing but Under-Resourced Movement* (NY: American Jewish World Service, Astraea Lesbian Foundation for Justice and Global Action for Trans*Equality, 2017), Executive Summary, <https://transactivists.org/wp-content/uploads/2017/10/Intersex-Exec-Summ-ENGLISH-For-the-Web.pdf> (accessed April 17, 2018). In addition, the Alliance for Peacebuilding’s, “Rewiring the Brain for Peace: Bridging Neuroscience, Spirituality, and Peacebuilding,” linked from the *Alliance for Peacebuilding’s Home Page*, <http://app.mappr.io/play/RewiringTheBrain> (accessed April 17, 2018), is inventorying the literature in this field. Finally, the issue of readiness and resilience affects other organizations and stakeholders beyond the DOD, in the realm of national security. See Lee R. Briggs et al., *Assessment Report: Stress and Resilience Issues Affecting USAID Personnel in High Operational Stress Environments* (Washington DC: U.S. Agency for International Development, September 2015), http://pdf.usaid.gov/pdf_docs/PA00KXHF.pdf (accessed April 17, 2018).

¹⁸⁹ The Center for Security Studies at Georgetown University - Security Studies Podcast : Episode 5 – Elizabeth Stanley on Mindfulness-based Mind Fitness Training, April 1017, audio file, <https://soundcloud.com/security-studies-podcast/e5-elizabeth-stanley> (accessed April 17, 2018).

