



JSOU Quick Look

Stress: New Approaches to Managing Stress

Introduction

Stress is a physiological response to a perceived threat in the environment: The body responds with changes to help someone respond to that threat. Stress responses aren't inherently negative, but the majority of Americans believe "stress is bad" and that people should aim to reduce their overall stress.¹

While researchers have found that some stress reduction techniques may be effective, they have also concluded that people too often believe these methods are the main option for dealing with stress.² But practically speaking, it is impossible to eliminate stress from the environment, and, for Special Operations Forces (SOF), a focus on stress reduction may be rejected as Pollyannaish.

Furthermore, even when reducing stress is possible, it isn't always beneficial to do so. Studies have shown that most people underperform in the absence of stress, while, for military populations, one of the most common causes of stress is boredom.³

In light of such findings, cutting-edge researchers have flipped the idea of stress management on its head. These experts argue that, rather than seeking to reduce stress, a better goal is to *change the perception of that stress*. For example, someone could believe that a stressor is threatening, but they could also say that the stressor is simply a challenge to confront. This shift in thinking could make a huge difference in how they respond.⁴

SOF have arguably been at the forefront of adopting an alternative approach to stress, as SOF training often includes stress exposure training (SET), which exposes trainees to gradually increasing levels of stress in order to develop their tolerance to it.⁵ In 2021, RAND researchers reviewed SET in military settings and concluded there was some evidence to support SET's use but noted that more research was needed to verify its efficacy.⁶

That same year, three teams of scientists did just that—they examined the use of SET in training for high-stress environments.

One team of researchers examined SET in a Danish special operations recruitment school. The Danish team concluded that SET did help build recruits' resilience; the team also identified ways to improve its execution—incorporating even more stressors into existing training.⁷ The other research teams examined SET's efficacy during training sessions for NASA astronauts and U.S. Air Force Explosive Ordnance Disposal (EOD) technicians. These researchers concluded that it was more effective to vary the amount of stress up and down, depending on an individual's current response, rather than use the traditional SET approach of simply raising the amount of stress over time.⁸ And the test went beyond the laboratory: One of the EOD teams successfully put its new stress-management skills into practice just two weeks later, while working at the crash site of an F-16 aircraft.⁹

While SOF may excel at using SET in initial training, there is less evidence SOF have effectively incorporated SET or these other alternative approaches in the day-to-day. And there are other strategies to consider, such as those discussed below.

Why Aren't Stress Reduction Strategies More Successful?

The clamor over chronic stress's potentially deleterious outcomes could, on its own, be part of the problem.¹⁰ Analysis of almost 186 million survey responses revealed that someone's belief that stress hurts their health has an *independent* association with poorer health—apart from the stress they experience.¹¹

Ironically enough, because stress is about the perception of a threat, a stress-is-damaging belief may be its own kind of damaging stressor.

Does Labeling Something as a “Challenge” or a “Threat” Make a Difference?

When someone is in a *challenge state*, they believe they have the knowledge, skills, resources, and ability to respond to a threat and succeed. When they are in a *threat state*, they believe they cannot succeed in that situation.¹²

These mental states then catalyze physiological changes to help someone respond accordingly. In a challenge state, the sympathetic adrenal medullary (SAM) system activates, so testosterone and epinephrine (aka adrenaline) increase, while cortisol levels drop. Heart rate increases and heart rate variability improves. The lungs and blood vessels dilate, allowing more oxygenated blood to move to the brain.

By contrast, in a *threat state*, SAM activates, but so does the hypothalamic-pituitary-adrenal (HPA) axis. The combination of SAM and HPA activation means that norepinephrine (noradrenaline) and cortisol increase. Heart rate improves, but heart rate variability declines as the vessels contract, impeding blood flow. HPA changes how glucose is metabolized.¹³

These physiological changes, in turn, impact performance. Those in a challenge state are more energized and resilient. They are less discouraged by setbacks. They have improved cognitive abilities, including better decision-making and proactive problem-solving. They have faster reaction times and increases in working memory. They have superior visual attentional control, fine motor skills, and muscle control.¹⁴

Being in a challenge state predicted superior performance for Dutch naval cadets during a shadowing, boarding, and search-and-rescue simulation.¹⁵ Those in a challenge state have been found to do better in a range of activities—from commercial pilot licensing to trauma surgery to college baseball championships.¹⁶ In a recent analysis of 38 studies, those in a challenge state outperformed those in a threat state 74 percent of the time.¹⁷

Studies have shown that when leaders have challenge mindsets, their followers have improved performance.¹⁸ Further, new research suggests that teammates may unconsciously transmit a challenge mindset to each other. In a recent lab study with partners working together on a task, researchers instructed one partner to adopt a challenge mindset. When they did so, both teammates showed an improved cardiac pattern and better performance—even though the other partner was unaware of their teammate's challenge mindset.¹⁹

What Is the “Stress-as-Enhancing” Approach?

Building on the challenge-vs.-threat model, the *stress-as-enhancing* model is an approach that encourages people to reject the idea that stress is debilitating. Instead, they should adopt the view that stress improves health, performance, and well-being.²⁰

In a 2020 study of U.S. Navy Basic Underwater Demolition/SEAL (BUD/S) students, those who began their training with a stress-as-enhancing mindset persisted longer in the class.²¹ And they were better students, too: They received 30 percent fewer negative comments in instructors' evaluations, 60 percent fewer negatives from their peers, and were 27 seconds faster when completing the obstacle course.

In lab experiments, researchers have taught people this stress-as-enhancing approach. The researchers told the participants that if they felt anxious, the participants should interpret their anxiety as a positive sign that they were performing well. When the participants followed this instruction, they had significant improvement in their

physiology and cognitive functioning.²² In one experiment, the participants had a dramatic rise in cardiovascular function. On average, their blood flow increased by more than half a liter per minute. Some had an additional two liters per minute.²³

How Can Physical Exercise Affect Stress?

As some psychological researchers teach people to change how they think about stress, other scholars are examining how vigorous physical activity may improve people's responses to stressors.

Since physical stress triggers the same metabolic processes as psychological stress, physical exercise can help individuals build up a tolerance against both physical and psychological stress.²⁴

Furthermore, the more vigorous someone's physical exercise, the lower their cortisol response to a stressor following their exercise.²⁵

The benefits of exercise aren't limited to how individuals respond to stress in the moment, either. For example, in one recent study, researchers found that physical exercise may decouple a link between stress and cellular aging.²⁶

How Does Operational Training Impact Stress?

Archilochus was right. SOF don't rise to meet expectations but fall back on training. That's because decision-making under extreme stress tends to be less analytical and more dependent on experience-driven habits and intuition. Therefore, once someone has trained to the point of automaticity, they can usually execute a skill even under duress.

And once they've achieved a level of expertise, they're less stressed, knowing they can succeed at a task. They draw on experience to see patterns, and this may lighten their cognitive load, giving them added mental capacity to tackle unanticipated changes in the environment.²⁷

However, training for highly specific contexts can also lead to *threat rigidity*, the application of a trained response to a situation where it no longer applies—and a decision on whether to override training protocols may compound an event's stress.²⁸

Are There Potential Drawbacks to Reframing Stress as a Positive?

While scholars work to make sure there are no significant drawbacks to reframing stress, some scholars already have warned of one issue: Leaders with a stress-as-enhancing mindset may be less perceptive of their subordinates' distress. These leaders may even misinterpret signs of subordinates' overwork as indicators of commitment and engagement.²⁹

Therefore, SOF leaders should:

- Learn to recognize symptoms of stress and burnout.
- Regularly check in with teammates to see how they are doing.
- Avoid minimizing someone's complaints. Even inaccurate or overblown critiques may illuminate how a teammate is doing.
- Actively encourage those under strain to take advantage of available resources.

Even as SOF encourage each other to reframe stressors as challenges they can overcome, they should still look out for those who may be struggling.

Conclusion

When it comes to managing stress, seeds of these new approaches—stress inoculation techniques, reframing stressors as challenges, and considering stress as an asset rather than a liability—are implicitly embedded in many training

programs for SOF and other high-stress environments.³⁰ But more can be done to push these into the forefront to help SOF succeed, both from the perspective of operations and the goal of long-term well-being. ↑

Notes

¹ Elissa S. Epel et al., “More Than a Feeling: A Unified View of Stress Measurement For Population Science,” *Frontiers in Neuroendocrinology* 49 (2018): 146–69; Alia J. Crum, Jeremy P. Jamieson, and Modupe Akinola, “Optimizing Stress: An Integrated Intervention for Regulating Stress Responses,” *Emotion* 20, no. 1 (2020): 120–25; Jeremy P. Jamieson et al., “Optimizing Stress Responses with Reappraisal and Mindset Interventions,” *Anxiety, Stress, & Coping* 31, no. 3 (2018): 245–61; and Alexandra D. Crosswell et al., “Improving the Language Specificity of Stress in Psychological and Population Health Science,” *Psychosomatic Medicine* 84, no. 5 (2022): 643–44.

² Crum, Jamieson, and Akinola, “Optimizing Stress,” 120–25; Jamieson et al., “Stress Responses,” 245–251. See also Alia J. Crum, Peter Salovey, and Shawn Achor, “Rethinking Stress: The Role of Mindsets in Determining the Stress Response,” *Journal of Personality and Social Psychology* 104, no. 4 (2013): 716–33.

³ Andrew Flood and Richard J. Keegan, “Cognitive Resilience to Psychological Stress in Military Personnel,” *Frontiers in Psychology* 13 (2022): 809003, <https://doi.org/10.3389/fpsyg.2022.809003>. See also Crum, Jamieson, and Akinola, “Optimizing Stress,” 120–125; Jamieson et al., “Stress Responses,” 245–51; Crum, Salovey, and Achor, “Rethinking Stress,” 716–33; Po Bronson and Ashley Merryman, *Top Dog: The Science of Winning and Losing* (New York: Twelve, 2013).

⁴ Jeremy P. Jamieson, Wendy Berry Mendes, and Matthew K. Nock, “Improving Acute Stress Responses: The Power of Reappraisal,” *Current Directions in Psychological Science* 22, no. 1 (2013): 51–56. See also Alison Wood Brooks, “Get Excited: Reappraising Pre-performance Anxiety as Excitement,” *Journal of Experimental Psychology: General* 143, no. 3 (2014): 1144–58.

⁵ Sean Robson and Thomas Manacapilli, *Enhancing Performance Under Stress: Stress Inoculation Training for Battlefield Airmen* (Santa Monica: RAND Corporation, 2014); Margaret A. Maglione et al., *Stress Control for Military, Law Enforcement, and First Responders* (Santa Monica: RAND Corporation, 2021).

⁶ Maglione et al., *Stress Control*.

⁷ Laura Friis Jepsen, Martin Andersen, and Asger Østergaard Andersen, “Mental Robusthed,” [Mental Toughness] (PhD diss., Forsvaret, Danish Ministry of Defense, 2021).

⁸ Tor Finseth et al., “The Effectiveness of Adaptive Training for Stress Inoculation in a Simulated Astronaut Task,” In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65, no. 1 (2021): 1541–45; Sarah E. Jackson et al., “Stress Inoculation Training (SIT-NORCAL), Part I: The Development and Preliminary Evaluation of a Psychological Performance Training Protocol,” *Journal of Special Operations Medicine* 21, no. 4 (2021): 37–45; Sarah E. Jackson et al., “Stress Inoculation Training (SIT-NORCAL), Part 2: A Pilot Study Among Explosive Ordnance Disposal Special Warfare Enablers,” *Journal of Special Operations Medicine* 21, no. 4 (2021): 46–53.

⁹ Jackson et al., “SIT-NORCAL Part 2.”

¹⁰ Crosswell, “Improving the Language Specificity.”

¹¹ Abiola Keller et al., “Does the Perception that Stress Affects Health Matter?” *Health Psychology* 31, no. 5 (2012): 677–84.

¹² Mark D. Seery, “Challenge or Threat? Cardiovascular Indexes of Resilience and Vulnerability to Potential Stress in Humans,” *Neuroscience & Biobehavioral Reviews* 35, no. 7 (2011): 1603–10; Jeremy P. Jamieson, Matthew K. Nock, and Wendy Berry Mendes, “Mind Over Matter: Reappraising Arousal Improves Cardiovascular and Cognitive Responses to Stress,” *Journal of Experimental Psychology: General* 141, no. 3 (2012): 417–22; Jim Blascovich, “Challenge and Threat,” *Handbook of Approach and Avoidance Motivation*, ed. Andrew J. Elliot, 431–45. New York: Psychology Press, 2008; and Bronson and Merryman, *Top Dog*.

¹³ Seery, “Challenge or Threat?”; Jamieson, Nock, and Mendes, “Mind Over Matter”; Blascovich, “Challenge and Threat”; Bronson and Merryman, *Top Dog*.

¹⁴ See Adrian Hase et al., “The Relationship between Challenge and Threat States and Performance,” *Sport, Exercise, and Performance Psychology* 8, no. 2 (2019): 123–44; Lee J. Moore et al., “The Effect of Challenge and Threat States on Performance,” *Psychophysiology* 49, no. 10 (2012): 1417–25; Karim S. Kassam, Katrina Koslov, and Wendy Berry Mendes, “Decisions under Distress,” *Psychological Science* 20, no. 11 (2009): 1394–99; Marc Jones et al., “A Theory of Challenge and Threat States in Athletes,” *International Review of Sport and Exercise Psychology* 2, no. 2 (2009): 161–80.

¹⁵ Iris Cohen, Willem-Paul Brinkman, and Mark A. Neerinx, “Modelling Environmental and Cognitive Factors to Predict Performance in a Stressful Training Scenario on a Naval Ship Simulator,” *Cognition, Technology & Work* 17, no. 4 (2015): 503–19. See also Kevin R. Harris et al., “‘Gun! Gun! Gun!’: An Exploration of Law Enforcement Officers’ Decision-making and Coping under Stress during Actual Events,” *Ergonomics* 60, no. 8 (2017): 1112–22 (discussion of police officers’ description of feeling excited during threat-of-life events is a challenge state).

- ¹⁶ Adrian Harvey et al., “Threat and Challenge: Cognitive Appraisal and Stress Responses in Simulated Trauma Resuscitations,” *Medical Education* 44, no. 6 (2010): 587–94; Samuel J. Vine, Lee J. Moore, and Mark R. Wilson, “An Integrative Framework of Stress, Attention, and Visuomotor Performance,” *Frontiers in Psychology* 7 (2016): 1671, <https://doi.org/10.3389/fpsyg.2016.01671>; Jim Blascovich et al., “Predicting Athletic Performance from Cardiovascular Indexes of Challenge and Threat,” *Journal of Experimental Social Psychology* 40, no. 5 (2004): 683–88; Jones et al., “A Theory of Challenge.”
- ¹⁷ Hase et al., “The Relationship.”
- ¹⁸ Anthony J. Miller, Matthew J. Slater, and Martin J. Turner, “The Influence of Identity Leadership Principles on Followers’ Challenge and Threat States and Motor Performance,” *Psychology of Sport and Exercise* 54 (2021): 101909, <https://doi.org/10.1016/j.psychsport.2021.101909>; Matthew J. Slater et al., “Capturing Hearts and Minds: The Influence of Relational Identification with the Leader on Followers’ Mobilization and Cardiovascular Reactivity,” *The Leadership Quarterly* 29, no. 3 (2018): 379–88.
- ¹⁹ Christopher Oveis et al., “Emotion Regulation Contagion,” *Journal of Experimental Psychology: General* 149, no. 11 (2020): 2187–205.
- ²⁰ Alia J. Crum et al., “The Role Of Stress Mindset in Shaping Cognitive, Emotional, and Physiological Responses to Challenging and Threatening Stress,” *Anxiety, Stress, & Coping* 30, no. 4 (2017): 379–95.
- ²¹ There was also data suggesting they were more likely to graduate, but this finding did not reach statistical significance. Eric N. Smith, Michael D. Young, and Alia J. Crum, “Stress, Mindsets, and Success in Navy SEALs Special Warfare Training,” *Frontiers in Psychology* 10 (2020): 2962, <https://doi.org/10.3389/fpsyg.2019.02962>.
- ²² Crum et al., “The Role of Stress Mindset.” See also Jeremy P. Jamieson et al., “Reappraising Stress Arousal Improves Affective, Neuroendocrine, and Academic Performance Outcomes in Community College Classrooms,” *Journal of Experimental Psychology: General* 151, no. 1 (2022): 197–212.
- ²³ Po Bronson and Ashley Merryman, “Why Can Some Kids Handle Pressure While Others Fall Apart?,” *The New York Times* (2013).
- ²⁴ Epel et al., “More Than a Feeling.”
- ²⁵ Adam Caplin et al., “The Effects of Exercise Intensity on the Cortisol Response to a Subsequent Acute Psychosocial Stressor,” *Psychoneuroendocrinology* 131 (2021): 105336, <https://doi.org/10.1016/j.psyneuen.2021.105336>.
- ²⁶ Eli Puterman et al., “The Power of Exercise: Buffering the Effect of Chronic Stress on Telomere Length,” *PLoS One* 5, no. 5 (2010): e10837, <https://doi.org/10.1371/journal.pone.0010837>.
- ²⁷ Gerald Matthews, Ryan W. Wohleber, and J. Lin, “Stress, Skilled Performance, and Expertise,” In *The Oxford Handbook of Expertise*, ed., Paul Ward et al., 490–524. Oxford: Oxford University Press, 2020.
- ²⁸ Roos Delahaj and J. M. Soeters, *Stress Training and the New Military Environment*. In *Human Dimensions in Military Operations—Military Leaders’ Strategies for Addressing Stress and Psychological Support* (pp. 17A-1–17A-10)(2006). Meeting Proceedings RTO-MP-HFM-134, Paper 17A. Neuilly-sur-Seine, France: RTO. In 1994, U.S. F-15 fighters shot down two Black Hawk helicopters. One analyst opined that this was because the pilots had been trained to identify enemy planes, but they hadn’t practiced recognizing friendly aircraft.
- ²⁹ Nili Ben-Avi, Sharon Toker, and Daniel Heller, “If Stress Is Good for Me, It’s Probably Good for You Too,” *Journal of Experimental Social Psychology* 74 (2018): 98–110; Antonia J. Kaluza et al., “A Leader in Need Is a Leader Indeed?,” *Applied Psychology* 71, no. 4 (2022): 1347–84.
- ³⁰ See Jim Blascovich, “Challenge, Threat, and Social Influence in Digital Immersive Virtual Environments,” *Social Emotions in Nature and Artefact* (2014): 44-54; Stéphane Bouchard et al., “Selection of Key Stressors to Develop Virtual Environments for Practicing Stress Management Skills with Military Personnel Prior to Deployment,” *Cyberpsychology, Behavior, and Social Networking* 13, no. 1 (2010): 83-94.

Author: Ashley Merryman



United States Special Operations Command

ATTN: JSOU Press

7701 Tampa Point Boulevard

MacDill AFB, FL 33621-5323

<https://jsou.edu/press>

THE VIEWS EXPRESSED IN THIS PUBLICATION ARE ENTIRELY THOSE OF THE AUTHORS AND DO NOT NECESSARILY REFLECT THE VIEWS, POLICY, OR POSITION OF THE UNITED STATES GOVERNMENT, DEPARTMENT OF DEFENSE, UNITED STATES SPECIAL OPERATIONS COMMAND, OR THE JOINT SPECIAL OPERATIONS UNIVERSITY.

THIS WORK WAS CLEARED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.