

Enhancing Human Performance and Flow In Resuscitation

Michael Lauria, BA, NRP, FP-C
Geisel School of Medicine
Dartmouth-Hitchcock Medical Center

1. The Focus on Performance

- Many high risk organizations have conducted rigorous academic investigations regarding the effects of acute stress on performance
- Across all domains evidence suggest excess acute stress leads to deterioration in nearly every aspect of performance
- These organizations have purposefully altered their training and education to compensate for the natural degradation in technical skills and cognitive performance
- Various strategies have been adopted that may be adapted to improve emergency care providers' performance during resuscitation

2. What is Optimal Performance?

- Many attempts have been made to outline physiological and cognitive parameters that define an "optimal performance zone".
- These attempts have been largely unsuccessfully as this performance state varies tremendously from individual to individual and between domains.
- A better way to describe it may be qualitatively as "flow", a concept presented and studied by Hungarian psychologist Mihály Csíkszentmihályi.
- Flow state of performance is characterized by the following characteristics:
 - Clarity of goals with immediate feedback
 - High concentration on a limited field or set of activities
 - Balance between skill and challenge
 - Feeling of control
 - Sense of effortlessness
 - Alert state of perception and time
 - Sense of unity and harmony between environment, team, and task
 - Performance of the task in and of itself is fulfilling

3. Performance Enhancing Psychological Skills

- Performance Enhancing Psychological Skills (PEPS) are set of four evidence-based skills that have been shown to both subjectively decrease stress and objectively increase performance in domains outside of medicine
- Their primary psychological mechanism of action is thought to provide cognitive reframing and decrease the perceived challenge of activities, which facilitates flow.
- The four elements of PEPS are as follows:
 - BREATHE – use "box breathing" or "performance enhancing breathing"
 - TALK – engage in positive self talk
 - SEE – use mental practice and visualization exercises for preparation
 - FOCUS – use a trigger word to maintain attention on important tasks

Selected References

1. Hancock PA, Szalma JL. Stress and Performance. In: Hancock PA, Szalma JL, eds. *Performance Under Stress*. Burlington, VT: Ashgate; 2008: 1-18.
2. Staal MA. Stress, cognition, and human performance: A literature review and conceptual framework. NASA Technical Report. 2004.
3. Driskell JE, Salas E, editors. *Stress and human performance*. Mahwah, NJ:

Psychology Press; 2013.

4. Csikszentmihalyi M, LeFevre J. Optimal experience in work and leisure. *J Personality Soc Psychol.* 1989; 56(5): 815.
5. Csikszentmihalyi M, Csikszentmihalyi IS, eds. *Optimal experience: Psychological studies of flow in consciousness.* Boston, MA: Cambridge university press; 1992.
6. Lauria MJ, Gallo IA, Rush S, Brooks J, Spiegel R, Weingart SD. Psychological Skills to Improve Emergency Care Providers' Performance Under Stress. *Ann Emerg Med.* 2017; 70(6): 884-890.
7. Lauria MJ, Rush S, Weingart SD, Brooks J, Gallo IA. Potential role for psychological skills training in emergency medicine: Part 1 - Introduction and background. *Emerg Med Australas.* 2016; 28(5): 607-610.
8. Weingart SD. Podcast 132 – MoTR – Toughness Part I with Michael Lauria. *EMCrit Blog.* Published on September 6, 2014. Accessed on February 4th 2018. Available at [<https://emcrit.org/racc/toughness-michael-lauria-i/>].
9. Lauria MJ. Imperturbability: William Osler, Resilience, and Redefining Mental Toughness by Mike Lauria. *EMCrit Blog.* Published on February 3, 2016. Accessed on February 4th 2018. Available at [<https://emcrit.org/racc/imperturbability-william-osler-resilience-and-redefining-mental-toughness/>].
10. Lauria MJ. Stress Inoculation Training by Mike Lauria. *EMCrit Blog.* Published on December 31, 2015. Accessed on February 4th 2018. Available at [<https://emcrit.org/racc/on-stress-inoculation-training/>]

