From Burnout to Balance

EMBRACING SELF-CARE IN MEDICINE

Sarah Cawley PA-C, IFMCP

Co-Founder- Practical Healing

May 15, 2024

DISCLOSURES

Relevant Financial Relationships

Co-Founder of Practical Healing and PH Performance



Relevant Non-Financial Relationships

Participating in ongoing research study funded by
 WHOOP in partnership with University of Queensland
 Australia regarding wearable technology and its impact

on women's metabolic health and weight loss.





OBJECTIVES

Understand the physiology of stress and its impact on our health

• Review the impact of various lifestyle practices in our current culture of healthcare

• Review practical strategies to combat the effects of the healthcare environment

BURNOUT

Emotional Exhaustion

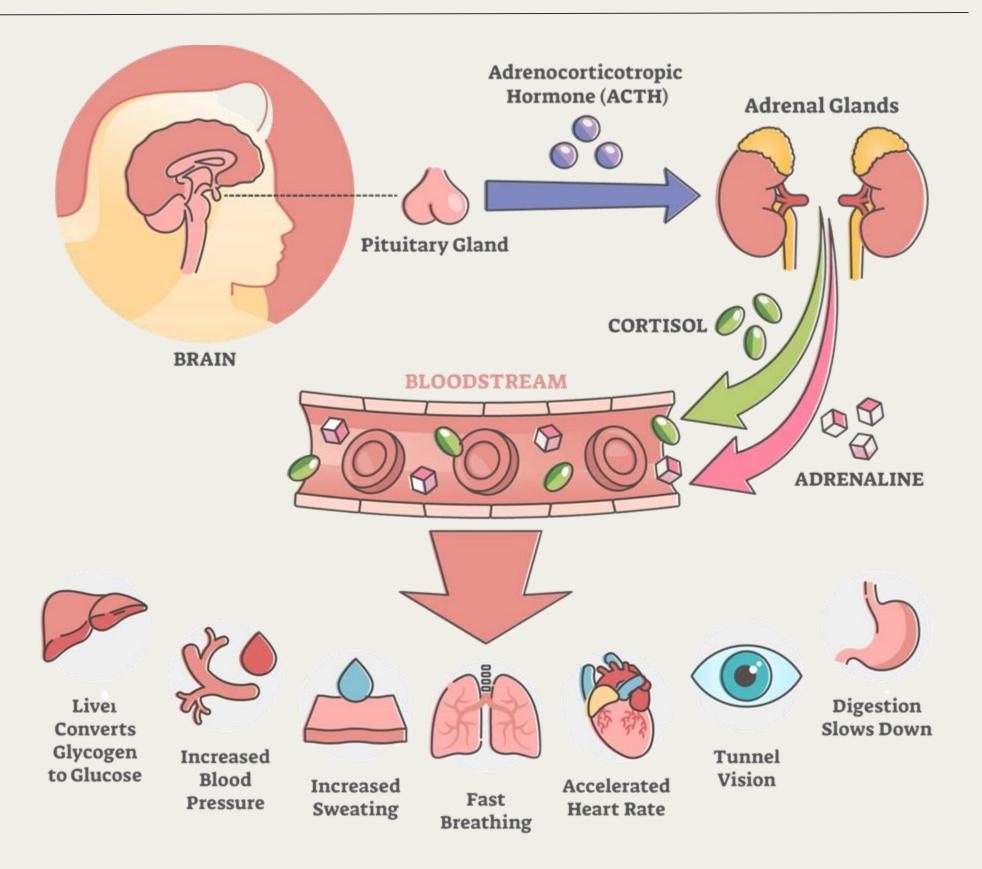
Cynicism and Detachment

Depersonalization

Sense of Ineffectiveness or Reduced Personal Accomplishment

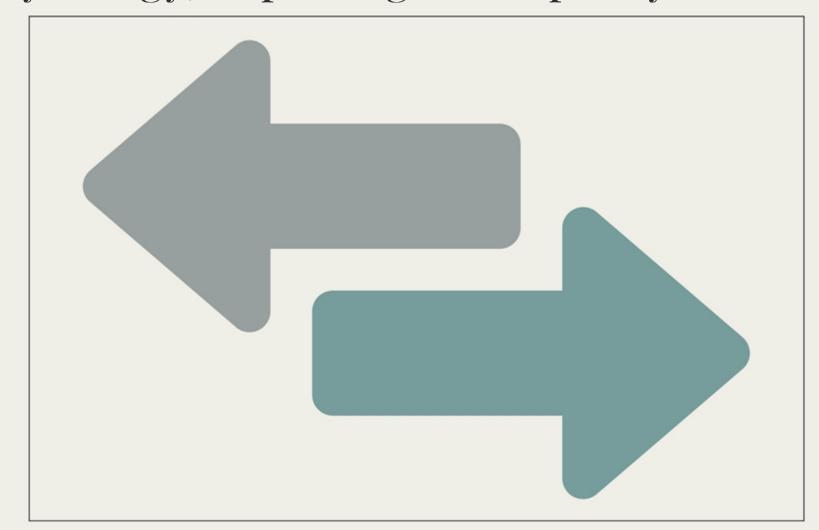
STRESS RESPONSE

- Tigers are everywhere!
- Overactivation of sympathetic nervous system
- Stress and Burnout are correlated with cognitive impairment, CVD, HTN, diabetes



THE DISCONNECT

- There is a disconnect in understanding how our health behaviors directly affect our stress levels
- TODAY'S GOAL: Explain how different lifestyle and health behaviors influence out physiology, impacting our capacity for **resilience**



HEART RATE VARIABILITY (HRV)

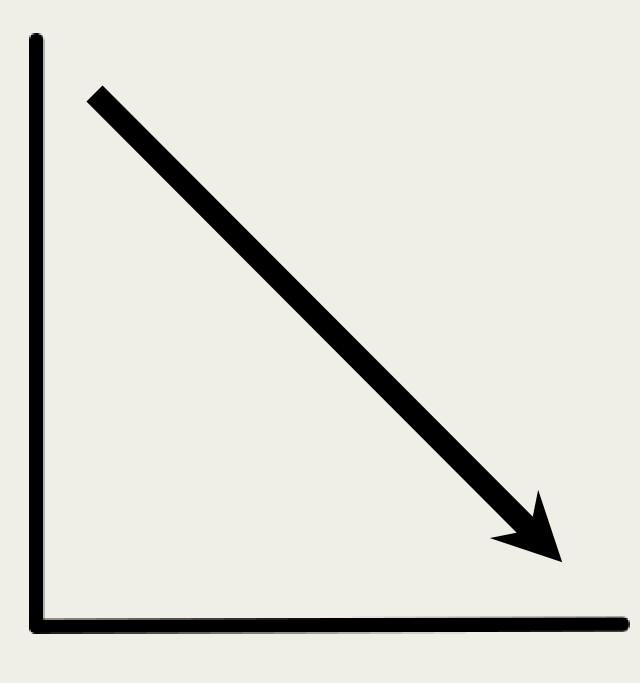
- HRV is a measurement of the variation in time between each hearbeat
- HRV can give us insight into our nervous system response
- HRV in medical professionals–
 emergencies have a measurable,
 predictable, and significant impact on
 HRV



PHYSIOLOGICAL RESPONSE

- HRV is controlled by ANS
- Stressor → increased HR → lower HRV
- What is a "good" HRV?

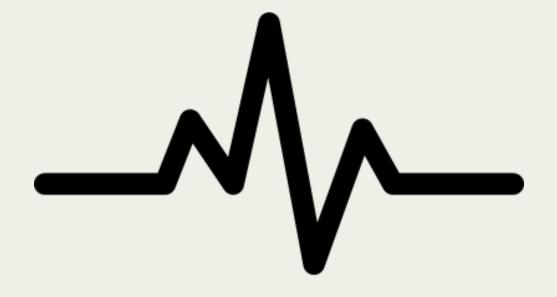




HRV

HTN & CVD

FACTORS THAT INFLUENCE HRV



Physiological



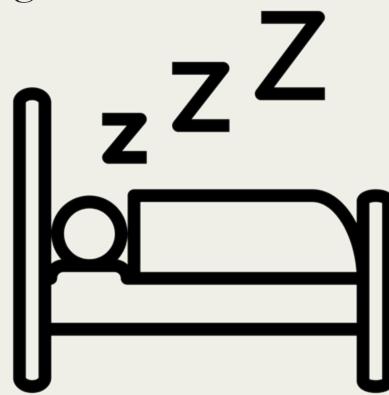
Psychosocial



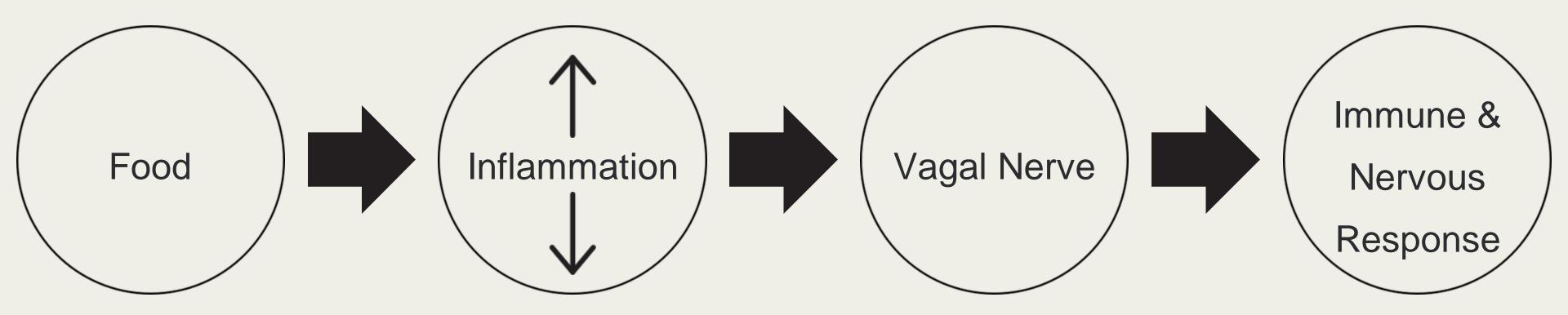
Lifestyle

SLEEP

- Do you get enough?
- Prevalence of 41.6% among healthcare professionals
- Increases risk of heart disease, stroke, cancer, hypertension, and diabetes
- Lack of sleep impairs decision-making and critical thinking
- Quality AND Duration impact HRV
- Resilience?



NUTRITION IMPACTS OUR INTERNAL ENVIRONMENT



NUTRITION SCIENCE AND HRV

- Framingham Heart Study links HRV to fasting blood glucose levels (13)
- Caloric restriction affects HRV positively (14)
- Trans Fat consumption associated with less favorable HRV (15)
- Omega-3 fatty acids enhance parasympathetic activity (16)
- Mediterranean diet associated with improved HRV (17)



EXERCISE: OUR MOST POWERFUL "DRUG"

- Lower HRV linked to 40% increased risk of cardiovascular events.
- Improvement in vagal tone, mediation of angiotensin II, and nitric oxide contribute could be drivers



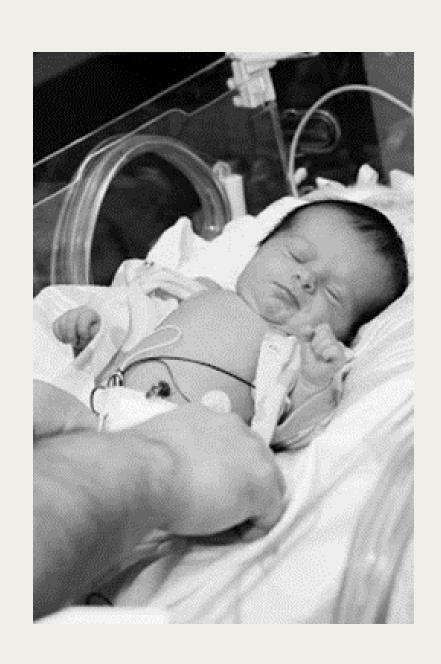
BEST EXERCISE FOR HRV IMPROVEMENT

Zone 2



HIIT Training

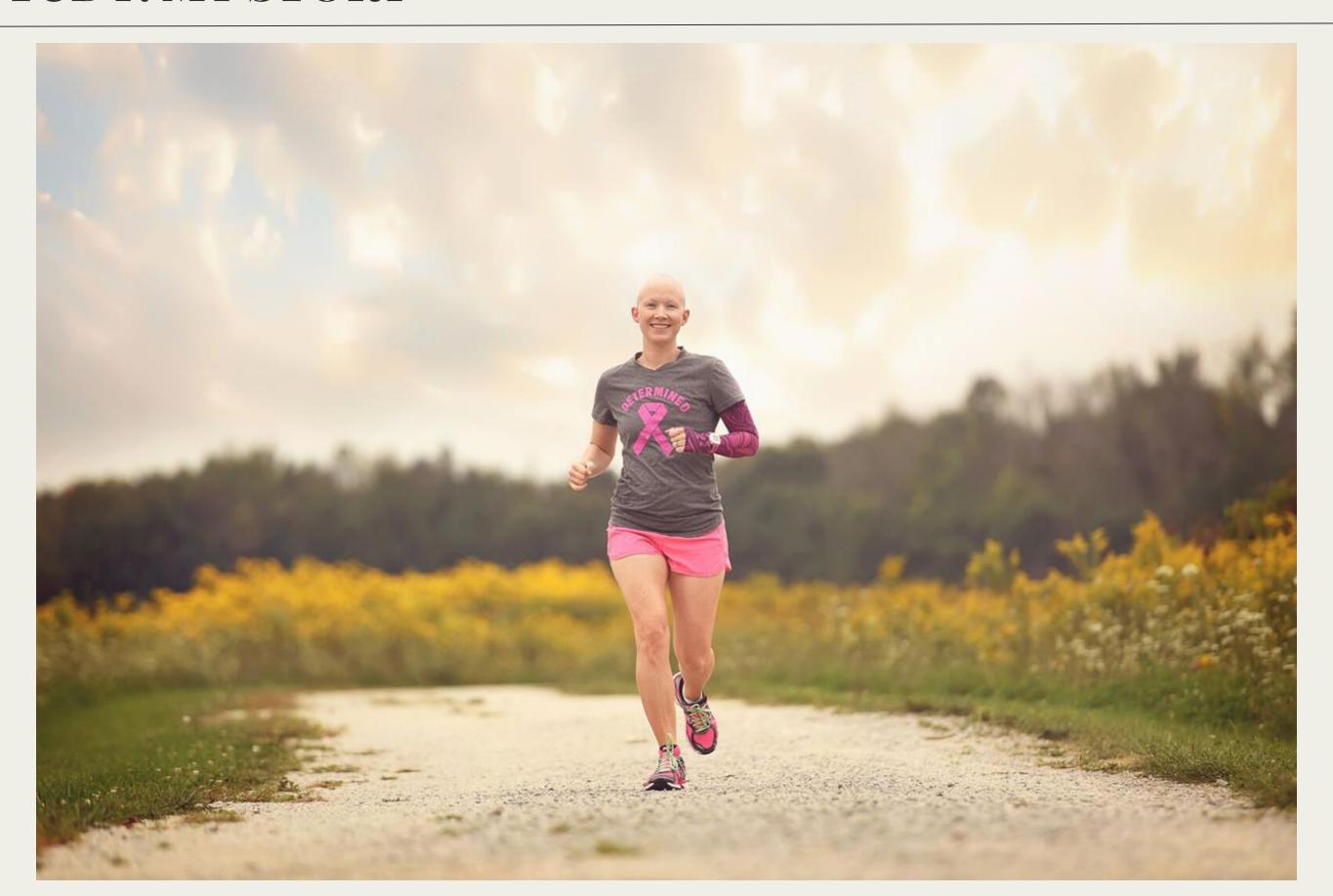


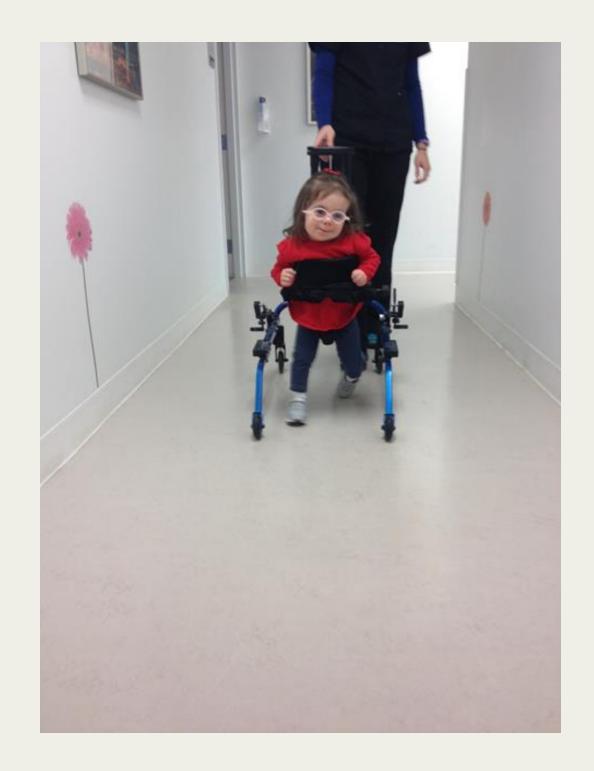




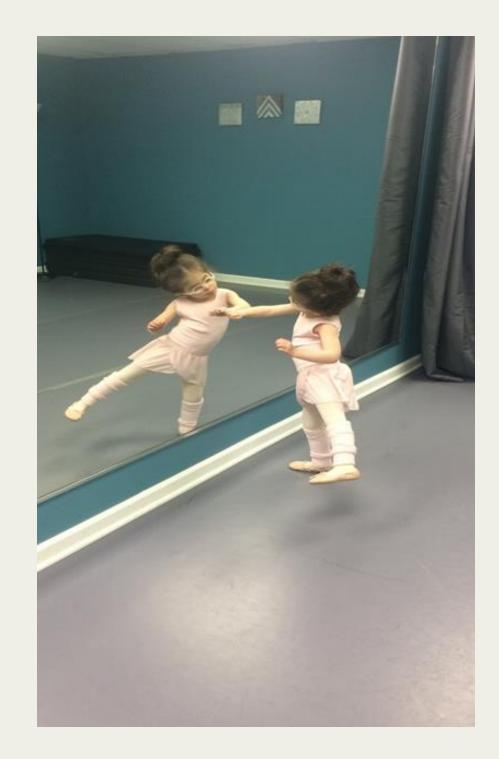


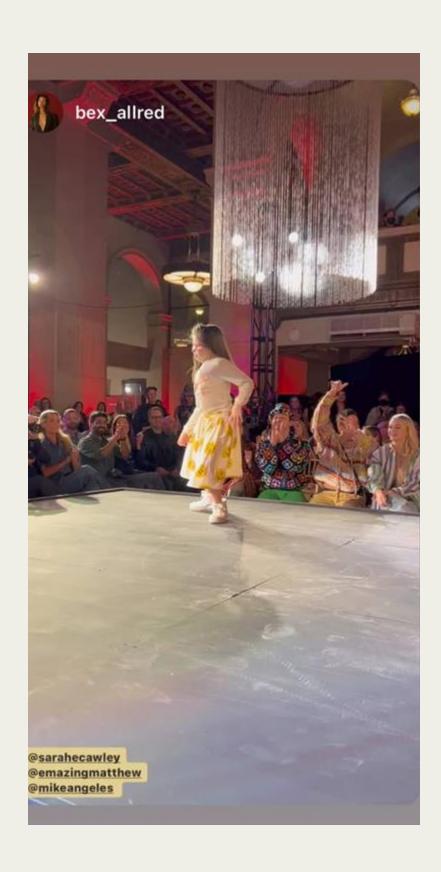


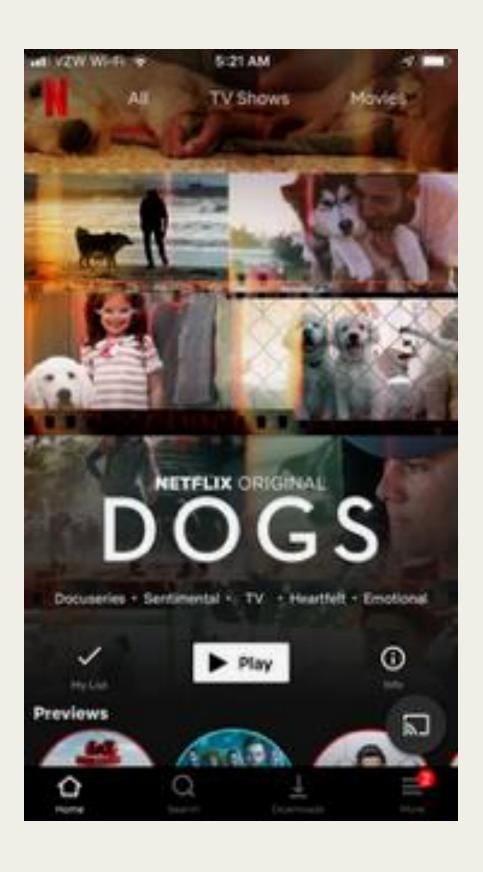


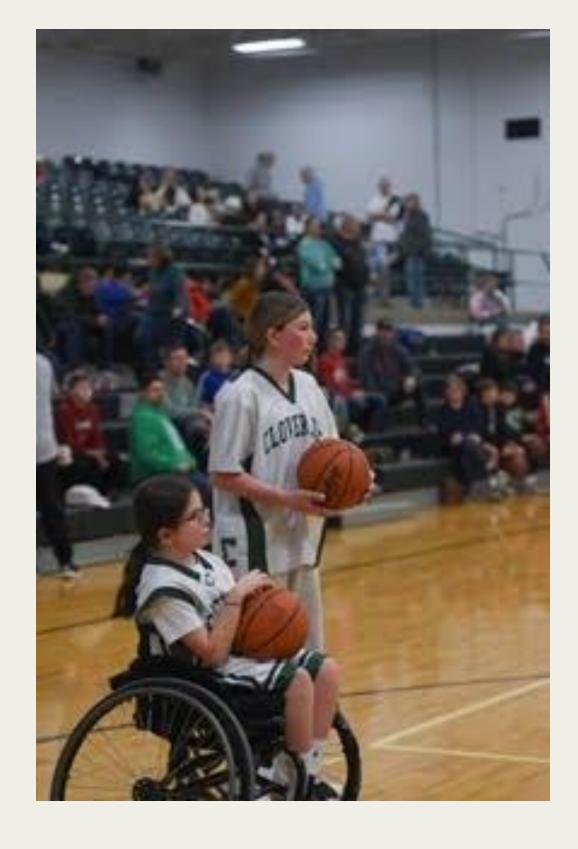














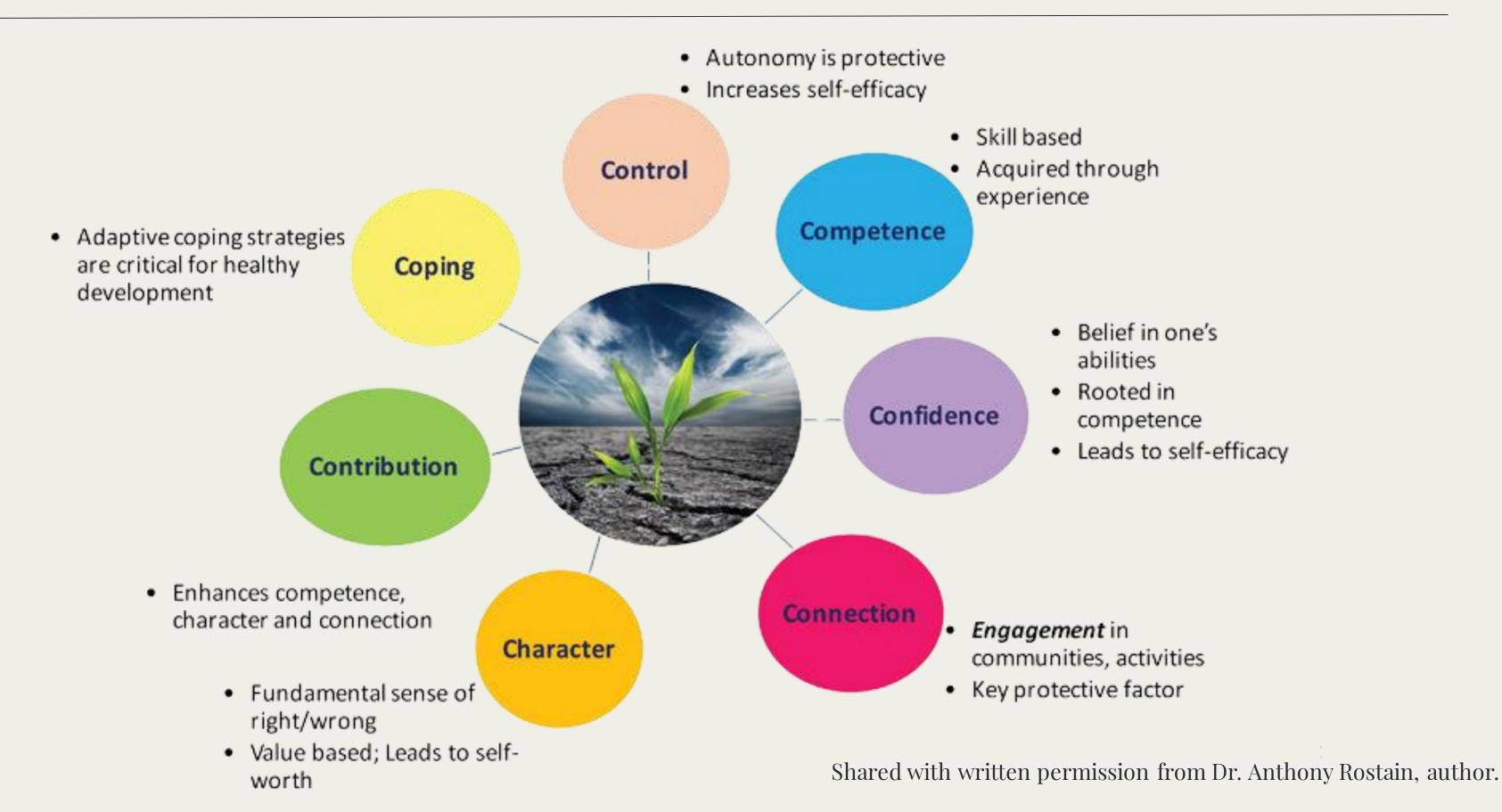


WHAT CAN WE CHANGE?

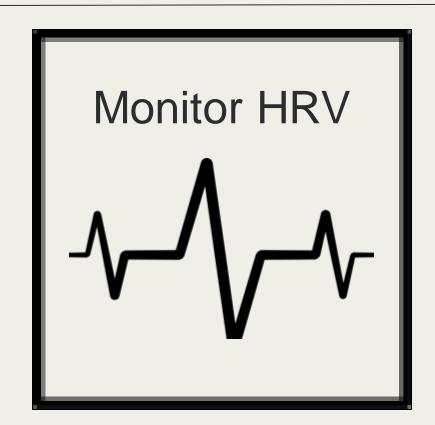
We can't change the nature of our work, but we can change the pieces of our culture that do not build resilience, and are contributing to burnout

According to Psychologist Christina Maslach, burnout is "not a problem of people, but of the social environment in which they work."

7 C'S MODEL OF RESILIENCE

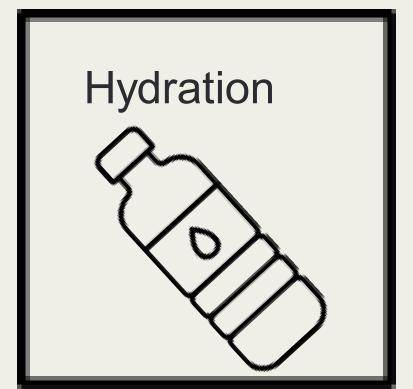


PRACTICAL CHANGES



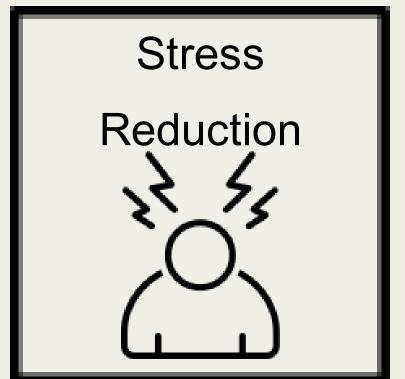






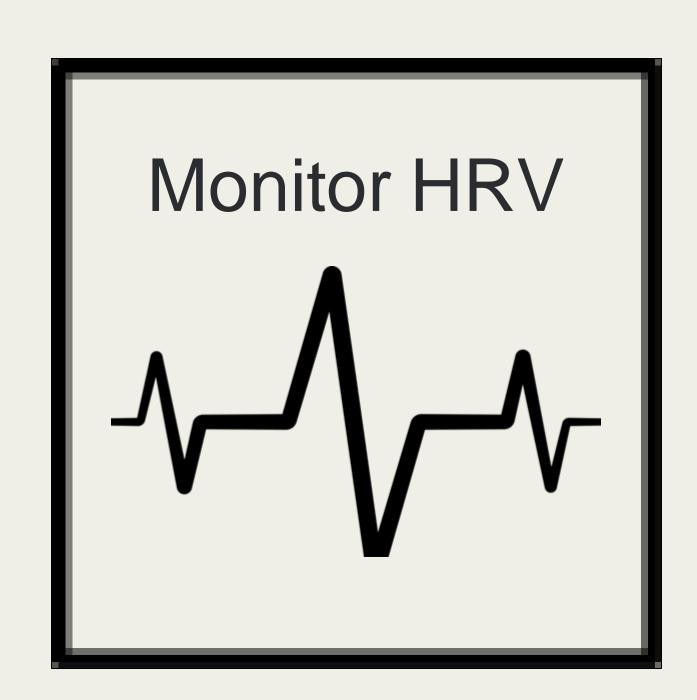






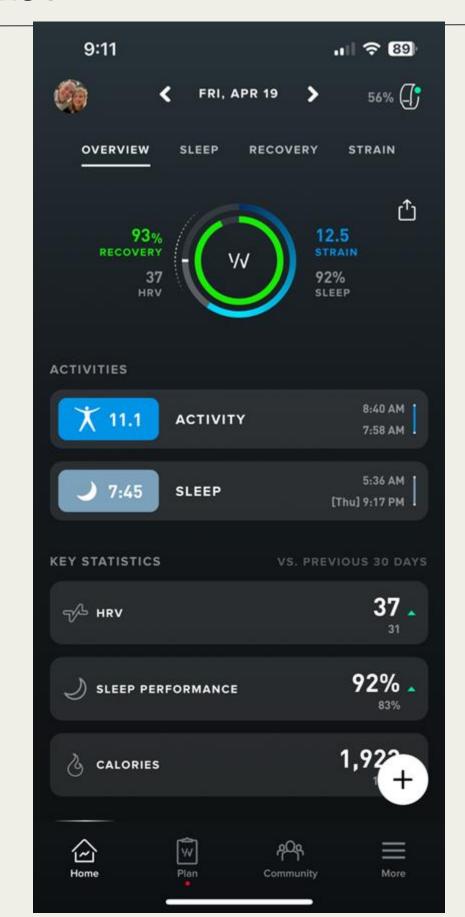


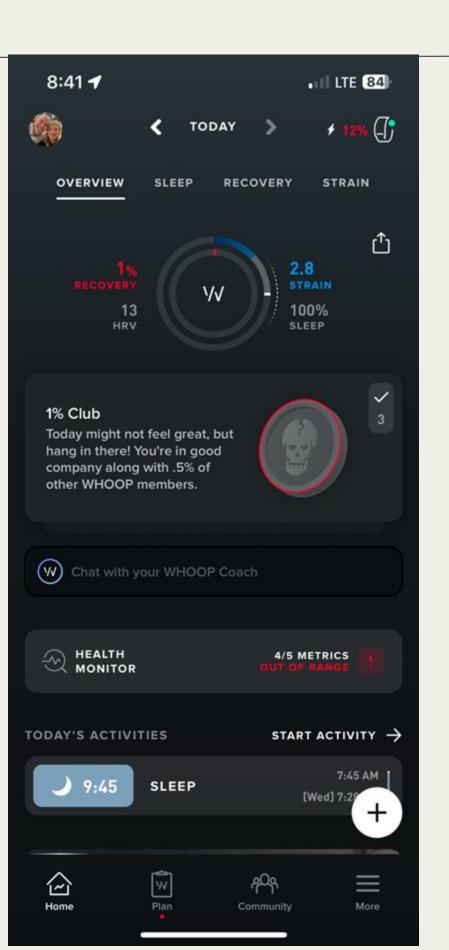
MONITOR HRV



- 1. Figure out what YOUR baseline is
- 2.Observe how your different behaviors affect that baseline
- 3.Find ways to incorporate behaviors that build resilience

MONITOR HRV



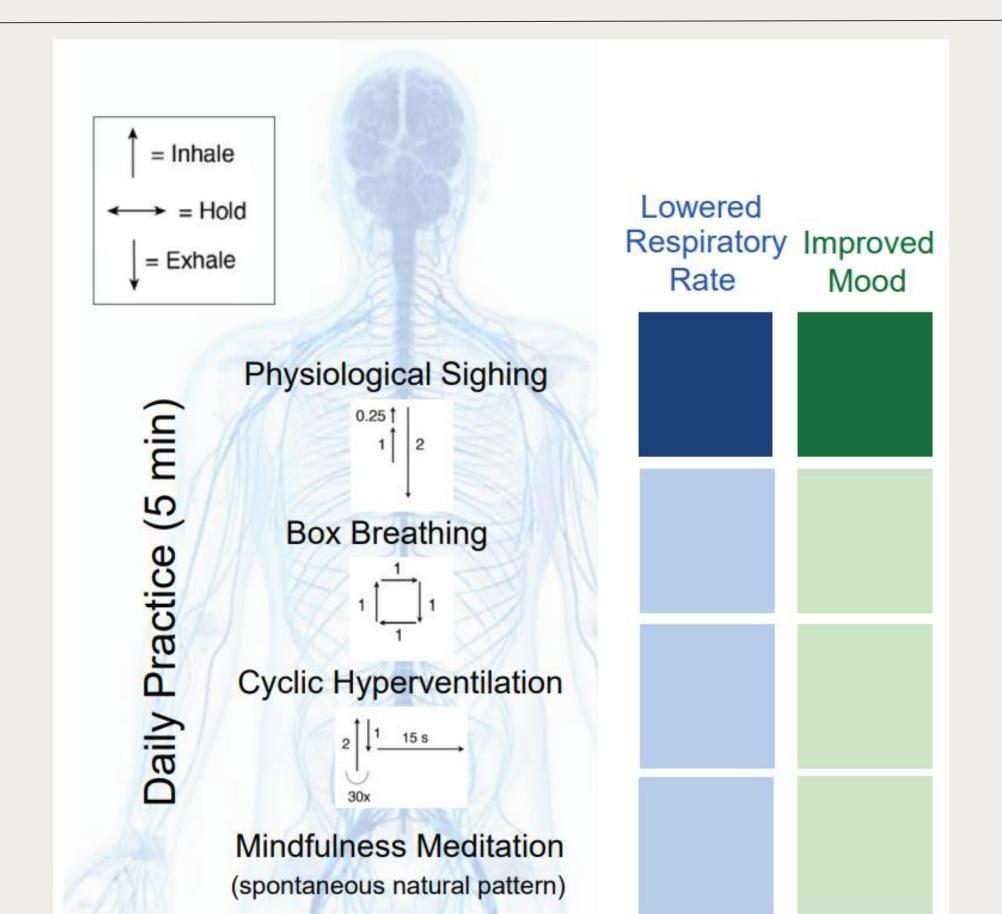


BREATHWORK AND MEDITATION



- Several studies have shown benefits here for reducing stress, improving memory, reduction of inflammation, in addition to improving HRV
- "I don't have time"
- "I can't"

BREATHWORKAND MEDITATION

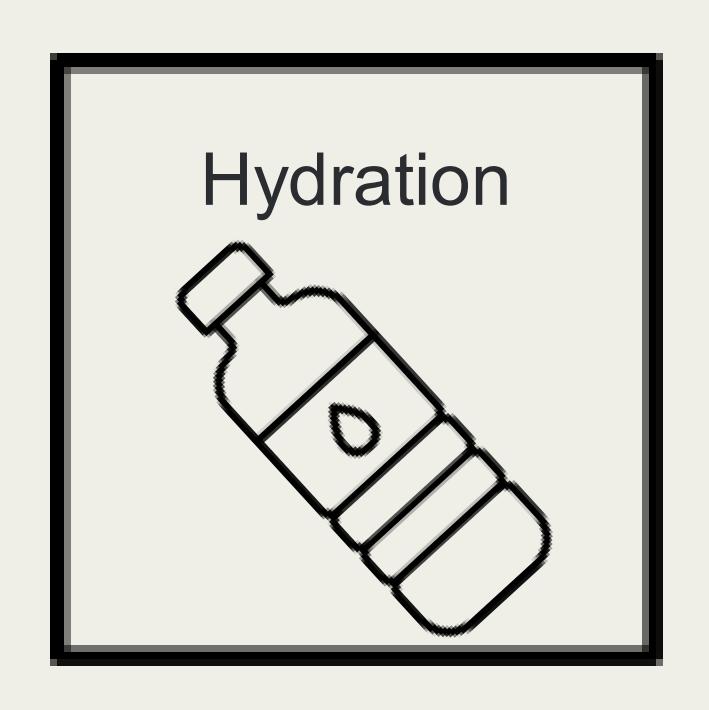


MOVEMENT AND EXERCISE



- 150 minutes a week
- 8-10,000 steps a day
- Zone 2 Training
- HIIT Training
- Strength Training

HYDRATION



- Simple starting point: Half your bodyweight in ounces
- Water intake helps regulate hormones and neurotransmitters
- Dehydration impairs cognitive function and exacerbates feelings of stress and fatigue

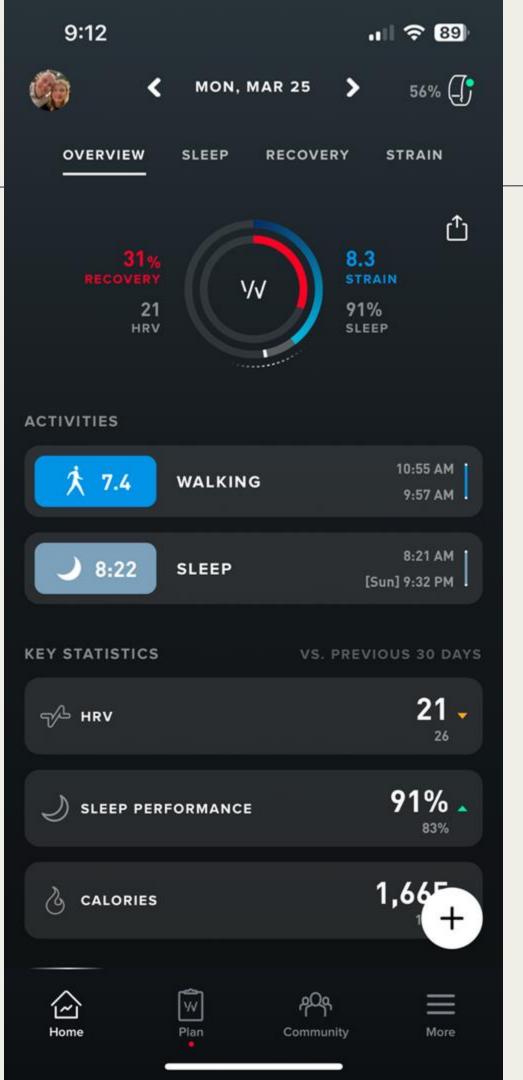
NUTRITION



- Whole food diet
- Mediterranean diet: rich in anti-inflammatory
 Omega 3's, polyphenols, B vitamins
- Managing blood sugar- reduction of processed foods and added sugars, as well as the addition of movement

NUTRITION







- Stress management must be an active pursuit!
 - spending time with friends
 - laughing
 - taking a 20 minute nature walk



- Burnout has been linked to higher levels of depression and depression has been linked to lower HRV
- Honoring and processing trauma is vital for self-care
- Counseling is where you can begin to process, and heal

SHIFTING OURSELVES AND THE CULTURE

To change the culture, we have to make all of this normal.

"You are allowed to be both a masterpiece and a work in progress, simultaneously"

-Sophia Bush

RESOURCES

- Akron Physicians Wellness Initiative
- Sky Breathing
- Employee Assistance Program
- Well-Being Index
- Aduro
- Provider Resilience committee
- Fitness Facility

REFERENCES

- 1. Shanafelt, T. D., Bradley, K. A., Wipf, J. E., & Back, A. L. (2002). Burnout and self-reported patient care in an internal medicine residency program. Annals of Internal Medicine, 136(5), 358-367. https://doi.org/10.7326/0003-4819-136-5-200203050-00008
- 2. Freudenberger HJ. Staff Burn-Out. J Soc Issues. (1974) 30:159-65. 10.1111/j.1540-4560.1974.tb00706.x [CrossRef] [Google Scholar]
- 3. Leo CG, Sabina S, Tumolo MR, Bodini A, Ponzini G, Sabato E, Mincarone P. Burnout Among Healthcare Workers in the COVID 19 Era: A Review of the Existing Literature. Front Public Health. 2021 Oct 29;9:750529. doi: 10.3389/fpubh.2021.750529. PMID: 34778184; PMCID: PMC8585922.
- 4. Kunda, G. (1995). Engineering Culture: Control and Commitment in a High-Tech Corporation. Organization Science, 6(2), 228. https://doi.org/10.1287/orsc.6.2.228
- 5. Mahmoud NN, Rothenberger D. From Burnout to Well-Being: A Focus on Resilience. Clin Colon Rectal Surg. 2019 Nov;32(6):415-423. doi: 10.1055/s-0039-1692710. Epub 2019 Aug 22. PMID: 31686993; PMCID: PMC6824889.
- 6. Khammissa RAG, Nemutandani S, Feller G, Lemmer J, Feller L. Burnout phenomenon: neurophysiological factors, clinical features, and aspects of management. J Int Med Res. 2022 Sep;50(9):3000605221106428. doi: 10.1177/03000605221106428. PMID: 36113033; PMCID: PMC9478693.
- 7. Tiwari R, Kumar R, Malik S, Raj T, Kumar P. Analysis of Heart Rate Variability and Implication of Different Factors on Heart Rate Variability. Curr Cardiol Rev. 2021;17(5):e160721189770. doi: 10.2174/1573403X16999201231203854. PMID: 33390146; PMCID: PMC8950456.
- 8. Peabody JE, Ryznar R, Ziesmann MT, Gillman L. A Systematic Review of Heart Rate Variability as a Measure of Stress in Medical Professionals. Cureus. 2023 Jan 29;15(1):e34345. doi: 10.7759/cureus.34345. PMID: 36865953; PMCID: PMC9974008.
- 9. Schlagintweit, J., Laharnar, N., Glos, M. et al. Effects of sleep fragmentation and partial sleep restriction on heart rate variability during night. Sci Rep 13, 6202 (2023). https://doi.org/10.1038/s41598-023-33013-5
- 10. Sajjadieh A, Shahsavari A, Safaei A, Penzel T, Schoebel C, Fietze I, Mozafarian N, Amra B, Kelishadi R. The Association of Sleep Duration and Quality with Heart Rate Variability and Blood Pressure.

 Tanaffos. 2020 Nov; 19(2):135-143. PMID: 33262801; PMCID: PMC7680518.
- 11. Salari N, Khazaie H, Hosseinian-Far A, Ghasemi H, Mohammadi M, Shohaimi S, Daneshkhah A, Khaledi-Paveh B, Hosseinian-Far M. The prevalence of sleep disturbances among physicians and nurses facing the COVID-19 patients: a systematic review and meta-analysis. Global Health. 2020 Sep 29;16(1):92. doi: 10.1186/s12992-020-00620-0. PMID: 32993696; PMCID: PMC7522913.
- 12. Young HA, Benton D. Heart-rate variability: a biomarker to study the influence of nutrition on physiological and psychological health? Behav Pharmacol. 2018 Apr;29(2 and 3-Spec Issue):140-151. doi: 10.1097/FBP.0000000000000383. PMID: 29543648; PMCID: PMC5882295.
- 13. Singh JP, Larson MG, O'Donnell CJ, Wilson PF, Tsuji H, Lloyd-Jones DM, Levy D. Association of hyperglycemia with reduced heart rate variability (The Framingham Heart Study). Am J Cardiol. 2000 Aug 1;86(3):309-12. doi: 10.1016/s0002-9149(00)00920-6. PMID: 10922439. Singh et al., 2000

REFERENCES

- 14. Stein PK, Soare A, Meyer TE, Cangemi R, Holloszy JO, Fontana L. (2012). Caloric restriction may reverse age-related autonomic decline in humans. Aging Cell 11:644–645.
- 15. Soares-Miranda L, Stein PK, Imamura F, Sattelmair J, Lemaitre RN, Siscovick DS, Mota J, Mozaffarian D. Trans-fatty acid consumption and heart rate variability in 2 separate cohorts of older and younger adults. Circ Arrhythm Electrophysiol. 2012 Aug 1;5(4):728-38. doi: 10.1161/CIRCEP.111.966259. Epub 2012 Jul 6. PMID: 22772898; PMCID: PMC3967844. Soares-Miranda et al. (2012)
- 16. Xin W, Wei W, Li XY. Short-term effects of fish-oil supplementation on heart rate variability in humans: a meta-analysis of randomized controlled trials. Am J Clin Nutr. 2013 May;97(5):926-35. doi: 10.3945/ajcn.112.049833. Epub 2013 Mar 20. PMID: 23515005.Xin et al. (2013)
- 17. Dai J, Lampert R, Wilson PW, Goldberg J, Ziegler TR, Vaccarino V. (2010). Mediterranean dietary pattern is associated with improved cardiac autonomic function among middle-aged men: a twin study. Circ Cardiovasc Qual Outcomes 3:366–373.
- 18. Karpyak VM, Romanowicz M, Schmidt JE, Lewis KA, Bostwick JM. Characteristics of heart rate variability in alcohol-dependent subjects and nondependent chronic alcohol users. Alcohol Clin Exp Res. 2014 Jan;38(1):9-26. doi: 10.1111/acer.12270. Epub 2013 Oct 11. PMID: 24117482.
- 19. Routledge FS, Campbell TS, McFetridge-Durdle JA, Bacon SL. Improvements in heart rate variability with exercise therapy. Can J Cardiol. 2010 Jun-Jul;26(6):303-12. doi: 10.1016/s0828-282x(10)70395-0. PMID: 20548976; PMCID: PMC2903986.
- 20. Nummela A, Hynynen E, Kaikkonen P, Rusko H. High-intensity endurance training increases nocturnal heart rate variability in sedentary participants. Biol Sport. 2016 Mar;33(1):7-13. doi: 10.5604/20831862.1180171. Epub 2015 Nov 19. PMID: 26985128; PMCID: PMC4786581.
- 21. Hillebrand S, Gast KB, de Mutsert R, Swenne CA, Jukema JW, Middeldorp S, Rosendaal FR, Dekkers OM. Heart rate variability and first cardiovascular event in populations without known cardiovascular disease: meta-analysis and dose-response meta-regression. Europace. 2013 May;15(5):742-9. doi: 10.1093/europace/eus341. Epub 2013 Jan 2. PMID: 23370966. Hillenbrand et al., 2013
- 22. Wingard DL, Berkman LF. Mortality risk associated with sleeping patterns among adults. Sleep. 1983;6(2):102-7. doi: 10.1093/sleep/6.2.102. PMID: 6878979.
- 23. Kripke DF, Simons RN, Garfinkel L, Hammond EC. Short and long sleep and sleeping pills. Is increased mortality associated? Arch Gen Psychiatry. 1979 Jan;36(1):103-16. doi:
- 10.1001/archpsyc.1979.01780010109014. PMID: 760693.
- 24. Maslach C, Leiter M P. New insights into burnout and health care: Strategies for improving civility and alleviating burnout. Med Teach. 2017;39(02):160–163.
- 25. Melis Yilmaz Balban, Eric Neri, Manuela M. Kogon, Lara Weed, Bita Nouriani, Booil Jo, Gary Holl, Jamie M. Zeitzer, David Spiegel, Andrew D. Huberman. Brief structured respiration practices enhance mood and reduce physiological arousal. Cell Reports Medicine. Volume 4, Issue 1. 2023. https://doi.org/10.1016/j.xcrm.2022.100895.
- 26. Salsabila, Z. S. (2023, September 17). Comparative analysis of classification methods: K-nn, Naïve Bayes, and SVM for determining human... Medium. https://medium.com/@zahrasaniaa/comparative-analysis-of-classification-methods-k-nn-na%C3%AFve-bayes-and-svm-for-determining-human-1d8b9309072c