



NEUROSCIENCE OF YOGA

PRESENTED BY GRAND VALLEY HATHA YOGA FOR
LAW SOCIETY NUNAVUT

MARSHA ELLIS RYT, MA OWNER
GRAND VALLEY HATHA YOGA



LAW SOCIETY NUNAVUT WELLNESS LUNCH TALK

INTRODUCTION

YOGA & MEDITATION

YOUR NERVOUS SYSTEM

NEUROSCIENCE

SAMPLE CHAIR YOGA &
PRANAYAMA PRACTICE

REFLECTIONS & RESOURCES



HOW I STARTED WHAT I DO NOW

GRAND VALLEY HATHA YOGA

YOGA & MEDITATION

YOGA

EFFECTIVENESS OF YOGA IN MANAGING STRESS, WITH A PARTICULAR FOCUS ON WORK-RELATED STRESS. YOGA COMBINES PHYSICAL POSTURES, BREATH CONTROL, AND MEDITATION, AND HAS GAINED RECOGNITION FOR ITS POTENTIAL TO RELIEVE STRESS.

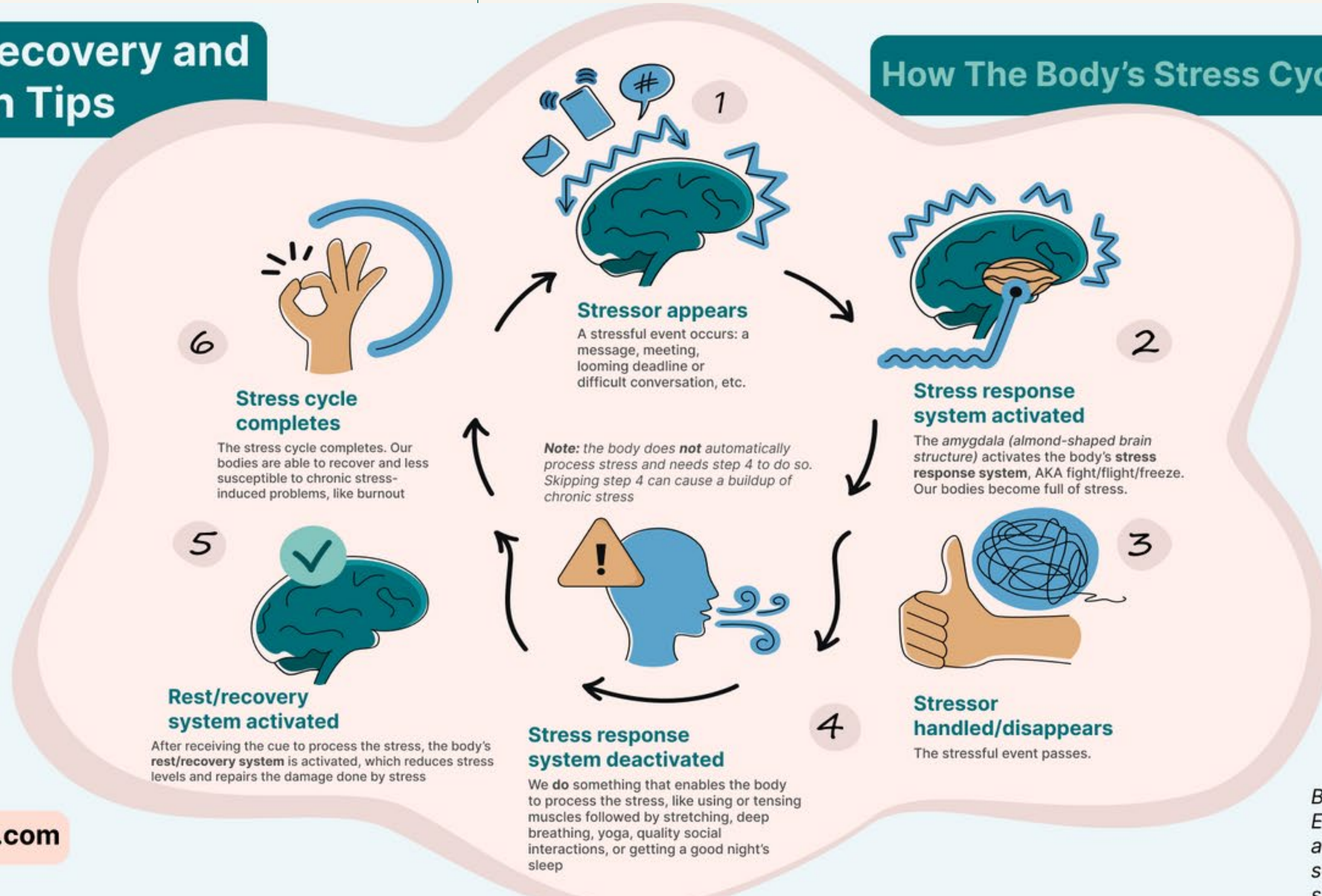
SELFCARE IS NOT SELFISH



STRESS CYCLE

Burnout Recovery and Prevention Tips

How The Body's Stress Cycle Works



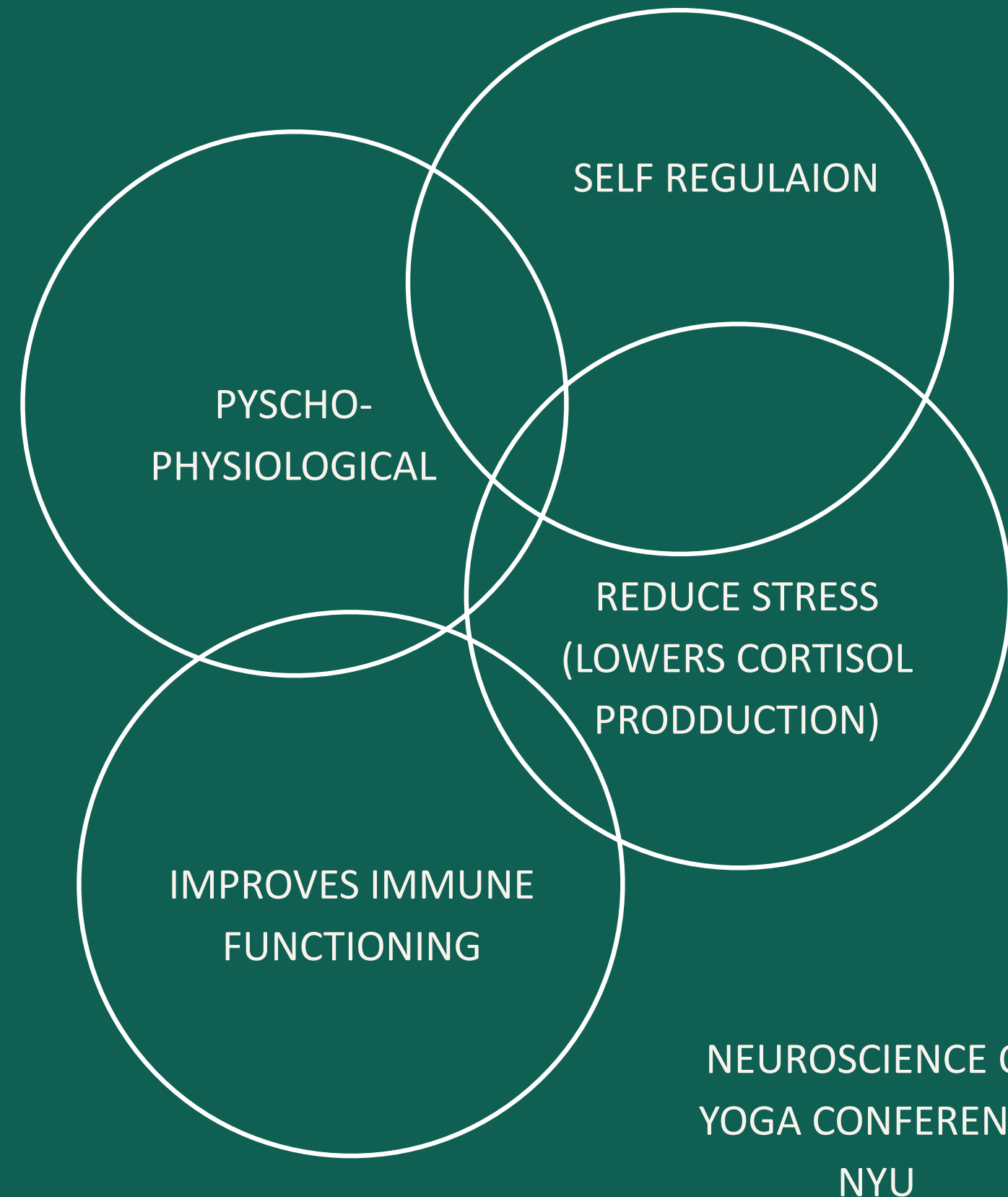
BENEFITS OF YOGA

EVIDENCE BASED
SCIENTIFIC
RESEARCH ON THE
MIND/BODY
BENEFITS OF YOGA

DR. SAT BIR KHALASA - HARVARD MEDICAL
SCHOOL

BOOK: "PRINCIPLES & PRACTICES OF YOGA
IN MODERN SCIENCE" FORTHOMCING
UPDATED VERSION

2024



NEUROSCIENCE OF
YOGA CONFERENCE
NYU

SYMPATHETIC NERVOUS SYSTEM

- FIGHT OR FLIGHT MODE
- cortisol released
- activity/stress, sense of urgency
prioritizing
- physically-heart rate increase,
extra blood, more energy and
resources mobilized
- body slows (or halts) otherbodily
functions such as digestion and
reproduction (for ex. estrogen
production with cortisol release)
- benefits- brain is alert, senses
become sharper, dealing with
stress

PARASYMPATHETIC NERVOUS SYSTEM

- soothes the stress response
- “feel good” hormones,
serotonins
- rest & digestion
- state of relaxation or homeostasis
that regulates our hormones,
progesterone, estrogen, lower
heart rate
- healing zone

YOGA & MEDITATION

Pranayams - Learning deep breathing can increase parasympathetic activation emphasized the benefits of mindful breathing throughout the day to regulate stress.

Progressive Muscle Relaxation- lowers cortisol

Savasana induces deep relaxation

NEUROSCIENCE, YOGA & WELLNESS

- Neuroplasticity: learning that the brain is plastic even late in life made students feel more hopeful about correcting habits and learning new mental skills.
- Cortisol, HPA axis: Learning about the detrimental effects of long-term cortisol release highlighted the importance of regulating emotional responses to daily stress.
- Parasympathetic/ Vagus activation: Learning how deep breathing can increase parasympathetic activation emphasized the benefits of mindful breathing throughout the day to regulate stress.
- Effects of stress and meditation on telomeres and telomerase levels: Learning about the possible ways in which stress and meditation might affect cellular aging highlighted the importance of practicing beneficial health habits.





MINDFULNESS & YOGA AT WORK

SAMPLE PRACTICES

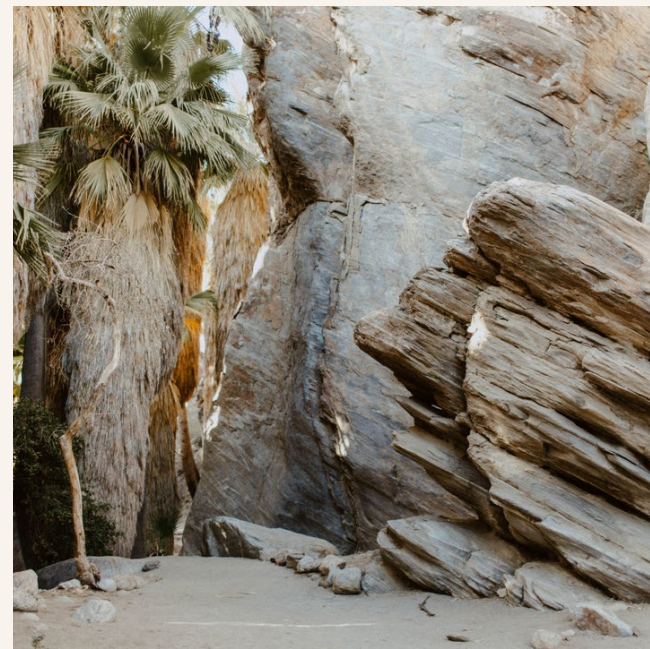
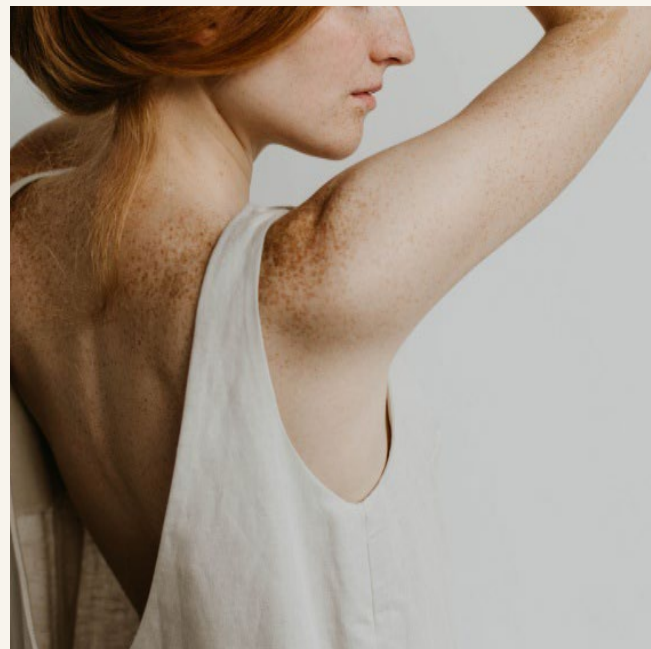
Chair Yoga Sequence- Break up your day with some mindful movement, yoga asanas, pranayama (belly breathing)

Mindful Eating, Present Moment Awareness (try warm tea for grounding) , Gratitude

Nature- birds sounds

Mindfulness Self Compassion - soles of the feet

GRAND VALLEY HATHA YOGA



REFLECTIONS:

WHAT ARE WAYS THROUGHOUT MY DAY
WHERE I COULD ADD MORE
MINDFULNESS, YOGA AND MEDITATION?

SOURCES & CONTACT

GRAND VALLEY HATHA YOGA

MARSHA ELLIS , RYT, MA

EMAIL: MARSHA.ELLIS0%@GMAIL.COM

SELECTED BIBLIOGRAPHY

Anti-Colonialism & Yoga

Barkataki, Susanna. Embrace Yoga's Roots. Ignite Yoga and Wellness Institute, 27 Oct. 2020.

Ranganathan, Shyam. Yoga – Anticolonial Philosophy. Singing Dragon, 18 Apr. 2024.

YOGA BOOK RECCOMENDATIONS

Lasater, Judith Hanson. Relax and Renew: Restful Yoga for Stressful Times. Berkeley, CA, Rodmell Press, 2011.

Reinhardt, Cassandra. Year of Yoga. Simon and Schuster, 21 June 2022.

Patañjali, and Swami Satchidananda. The Yoga Sutras of Patanjali. Yogaville, Integral Yoga Publications, 1990.

Academic Journal Articles

Agnieszka Zok, et al. "Reduce Stress and the Risk of Burnout by Using Yoga Techniques. Pilot Study." *Frontiers in Public Health*, vol. 12, 2 Apr. 2024,

<https://doi.org/10.3389/fpubh.2024.1370399>.

Brown, Richard P., and Patricia L. Gerbarg. "Sudarshan Kriya Yogic Breathing in the Treatment of Stress, Anxiety, and Depression: Part I—Neurophysiologic Model." *The Journal of Alternative and Complementary Medicine*, vol. 11, no. 1, Feb. 2005, pp. 189–201, <https://doi.org/10.1089/acm.2005.11.189>. Accessed 24 Sept. 2019.

Shobana R, Maheshkumar K, Venkateswaran ST, Geetha MB, Padmavathi R. Effect of long-term yoga training on autonomic function among the healthy adults. *J Family Med Prim Care*. 2022 Jul;11(7):3471-3475. doi: 10.4103/jfmpc.jfmpc_199_21. Epub 2022 Jul 22. PMID: 36387716; PMCID: PMC9648241.

Sharma, Rajni, and Babita Ghai. "The Yoga Brain Connection: A Neuroscientific Approach to Chronic Back Pain Management." *Annals of Neurosciences (Print)*, 18 Feb. 2024, <https://doi.org/10.1177/09727531241232243>. Accessed 10 Apr. 2024.

Singh, Nilkamal. "Neurobiological Basis for the Application of Yoga in Drug Addiction." *Frontiers in Psychiatry*, vol. 15, 18 Apr. 2024,

<https://doi.org/10.3389/fpsy.2024.1373866>. Accessed 24 Apr. 2024.

Hatfield BD. Kinesiology and Mental Health: The Promise of Exercise Neuroscience Research for Diseases and Disorders of the Brain. *Kinesiology Review*, 2012; 1(1): 46-58. (Neurocognitive benefits of exercise in child development)

Perez-Diaz O, Góngora D, González-Mora JL, Rubia K, Barrós-Loscertales A, Hernández SE (2024) Enhanced amygdala–anterior cingulate white matter structural connectivity in Sahaja Yoga Meditators. *PLoS ONE* 19(3): e0301283. <https://doi.org/10.1371/journal.pone.0301283>

Agnieszka Zok, et al. "Reduce Stress and the Risk of Burnout by Using Yoga Techniques. Pilot Study." *Frontiers in Public Health*, vol. 12, 2 Apr. 2024, <https://doi.org/10.3389/fpubh.2024.1370399>.

THANK YOU !