

MINDFULNESS AND THE BRAIN



Stephanie Will, LCPC
Mental Health Services Program Manager
Montgomery College
Student Health and Wellness (SHaW) Center for Success



Richard Cerkovnik
Director, Interdisciplinary Science, Technology,
Engineering, and Math (iSTEM) Network
Montgomery College



Sharon Kauffman
Project and Planning Analyst II & Part-Time Faculty
iSTEM Network
Montgomery College

Objectives

- Identify negative impact of stress on the body and brain
- Define mindfulness and examine its efficacy in combating stress
- Describe how practicing mindfulness physiologically impacts the brain
- Participate in guided mindfulness practice
- Discuss ways to incorporate mindfulness into daily self-care



Stress

- Everyone experiences stress
- Good Stress
 - Can help you focus and get the task at hand done
- Bad Stress
 - Frequent and intense stress can strain your body
 - Makes it impossible to function
- Stress triggers fight/flight/freeze response
 - Stress increases hormones such as adrenaline and cortisol
 - Affects blood pressure and heart rate, leading to additional strain on cardiovascular system

Signs You May Be Too Stressed

- Headache
- Muscle tension
- Fatigue
- Chest pain
- Upset stomach
- Change in sex drive
- Trouble sleeping
- Anxiety
- Depression
- Lack of motivation
- Inability to concentrate
- Irritability
- Feeling overwhelmed
- Weakened immune system

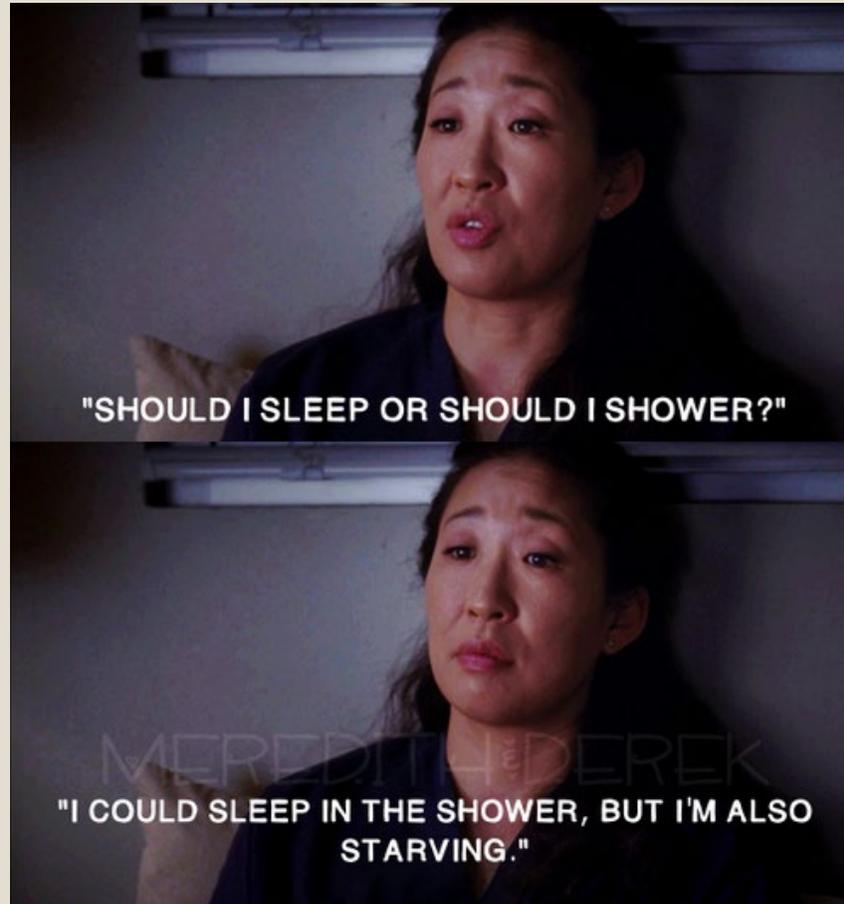
Stress Management

- Part of stress management is knowing how to stop it before it starts
- There are a lot of things we can't control, so don't overdo it on the things you can
 - Reasonable coursework load
- Talking to professors, department chairs and advisors
- Don't join all of the clubs or try to be an officer in more than 1
 - Looks better for you to be really good at 1 or 2 things than be overwhelmed with 6 or 7
- Mindfulness practices help us key in on early signs of stress so we can intervene

What is Self-Care?

How Important is Self-Care?

How Much Time Do You
Spend on Self-Care?



"SHOULD I SLEEP OR SHOULD I SHOWER?"

MEREDITH GREY
"I COULD SLEEP IN THE SHOWER, BUT I'M ALSO STARVING."

Self-Care

- Introverts v. Extroverts
 - Be true to who you are and make sure you care for yourself appropriately
- Scheduling self-care time
 - Who is going to prioritize your health and well being?
- Work/School/Life boundaries (not balance)
 - Being present in what you're doing
 - More intentional during COVID-19
 - Try to define your workspaces separately from family spaces
 - Some days it won't work the way you want it to, and that's ok

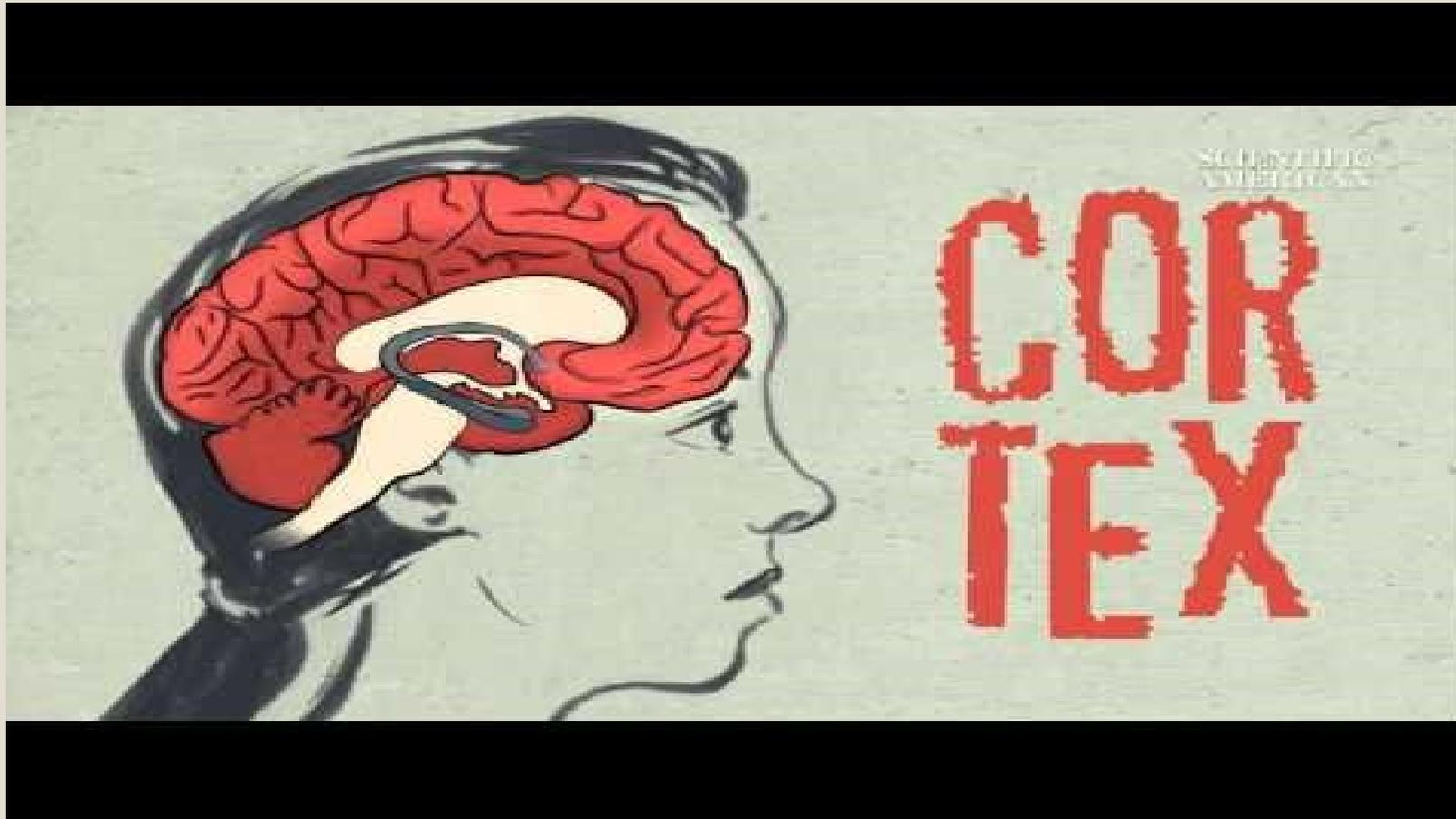
What is Mindfulness?

- Mindfulness is paying attention on purpose
- Being in the moment without judgement
 - Not assessing whether or not we like what's going on, but noticing things as they are
- Helps us tune into our bodies and minds and how we interact in our world
- Various ways to practice mindfulness
 - Micro-mindfulness minutes as we are doing our every day things
 - Set-aside time for meditation

Mindfulness v. Meditation

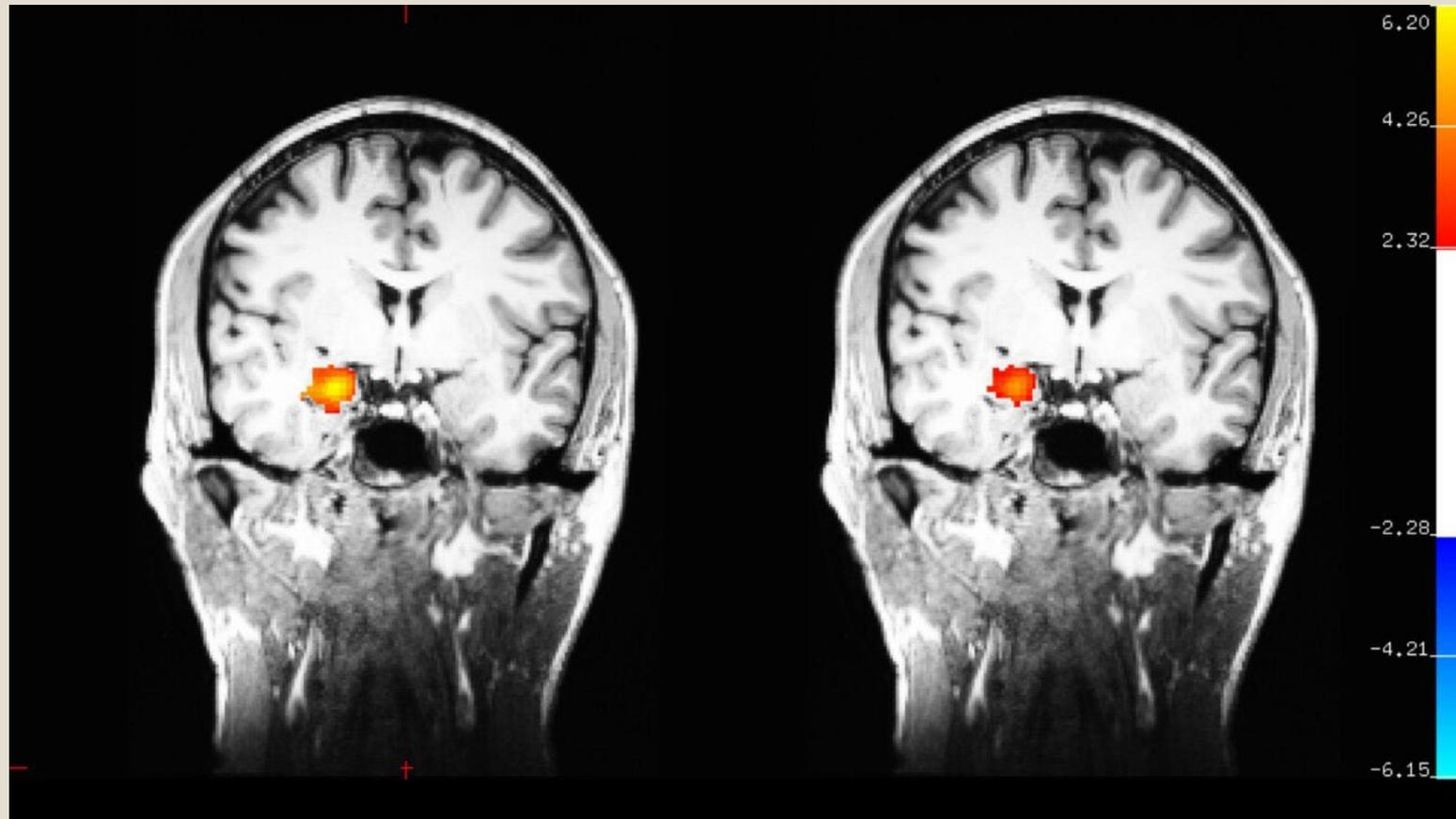
- Often used interchangeably
- Meditation is umbrella term
 - Goal of higher consciousness and cleared deep rest state
- Mindfulness is a directed paying attention
 - Can be a type of meditation
 - Encouraged to practice mindfulness while we're actively doing something
 - Cooking, cleaning, speaking to someone, walking outdoors
- Mindfulness meditation
 - Practice of consciously choosing to focus attention on something specific in an effort to contribute to some kind of desired outcome
 - Thoughts or bodily sensations

How Does Meditation Change the Brain?



Mindfulness and Stress

- Longer term practice (4 weekly 1-hour sessions)
 - Reduce overall anxiety and dysphoric mood
 - Heart rate monitoring shows a more adaptive response to stress
- Single session brief 15-minute mindfulness exercises
 - Increase emotional awareness
 - Reduce emotional avoidance
- Mindfulness-based stress reduction (MBSR)
 - Twenty minutes a day-- averaged 11% reduction in perceived stress in office settings
- Improves memory and concentration



Functional MRI (left) showing activation in the amygdala when participants were watching images with emotional content before learning meditation. After eight weeks of training in mindful attention meditation (right) note the amygdala is less activated after the meditation training. (Courtesy of Gaelle Desbordes)

<https://news.harvard.edu/gazette/story/2018/04/harvard-researchers-study-how-mindfulness-may-change-the-brain-in-depressed-patients/>

Limitations of Mindfulness

- Not a replacement for medical or mental health treatment
- Sustained attention to the body can lead to a dissociative, or freeze, response
 - Awareness touches old physical or psychological wounds that have never been resolved
 - Can get stuck in the pain and can't get out
- If you have chronic pain or past trauma, begin practice with a trained professional

Guided Mindfulness Exercise

Thoughts?

How to Apply Mindfulness

- Work it into your daily routine
 - Carve out minutes for quiet-ish focus on breaths
 - Be mindful as you are performing tasks
 - Showering
 - Driving
 - Eating
 - Putting kids to bed
 - Cleaning
- Being mindful of 3 breaths before switching gears
 - Moving from driving to work mode
 - Meeting mode to checking email mode
 - Parent mode to sleep mode

How to Apply Mindfulness

- Check in with your body
 - Face
 - Neck and shoulders
 - Posture
- Interactions with others
 - Listen to listen, not to respond
 - Make eye contact
 - Gratitude

How to Apply Mindfulness

- Engage 5 senses
 - Soothing jars
 - Play-Doh
 - Bubble wrap
 - Scented lotions/candles
- Mindfulness apps
 - Mindfulness Daily
 - Headspace: Mindfulness
 - Calm
 - Mindfulness Coach (from the VA)

Resources

- Watford, T. S., & Stafford, J. (2015). The impact of mindfulness on emotion dysregulation and psychophysiological reactivity under emotional provocation. *Psychology of Consciousness: Theory, Research, and Practice*, 2, 90-109.
- Shearer, A., Hunt, M., Chowdhury, M., & Nicol, L. (2016). Effects of a brief mindfulness meditation intervention on student stress and heart rate variability. *International Journal of Stress Management*, 23, 232-254.
- Broderick, P. (2005). Mindfulness and coping with dysphoric mood: Contrasts with rumination and distraction. *Cognitive Therapy and Research*, 29, 501-510.
- <https://www.mindful.org/mindfulness-meditation-guided-practices/>
- <https://www.psychologytoday.com/blog/body-sense/201105/the-limits-mindfulness>
- <http://leftbrainbuddha.com/40-ways-bring-mindfulness-days/>
- <http://www.medicaldaily.com/mindfulness-meditation-differences-377346>
- <https://www.umassmed.edu/cfm/mindfulness-based-programs/>

Additional Resource Document

- Search Parameters
- Research Studies
- Brief Videos
- fMRI Images

<https://www.montgomerycollege.edu/special-programs/global-humanities-institute/steam-2022.html>



THANK YOU!

Presentation Discussion Highlights

- Mindful.Org Good Apps (also see Resource slide and document)
- Sometimes it is hard to concentrate in the middle of the day because all the daily tasks creep in. Mindfulness isn't about emptying your mind, but rather finding one thing to focus on so other thoughts do not creep in.
- Mindfulness is being attentive to the current activity
- Mindfulness can be brief and doesn't have to be prolonged meditation