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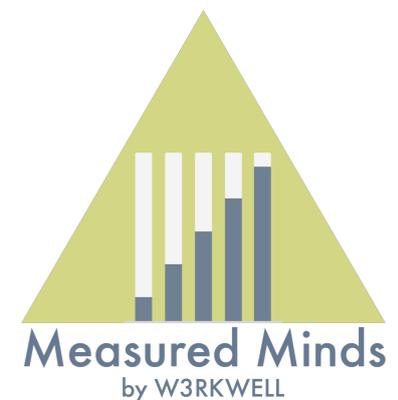


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Consultant | Writer | Clinical blogger | Researcher | Clinician | Meditator | Yogini |
Traveler



Cautionary statement: This course is not designed to treat or diagnose any mental or physical health issues. The behavior change system created to teach and increase meditation behavior and systematically measure any decrease in stress-related behavior is low risk and does not pose any known harm to healthy students. People with existing mental health conditions should speak with their health care providers before starting a meditative practice, and make their meditation instructor aware of their condition.

Today's Webinar



Education

Audio + video

+



Experience

A 2-minute meditation

+



Accountability & Data

Data collection system



Today's Objectives

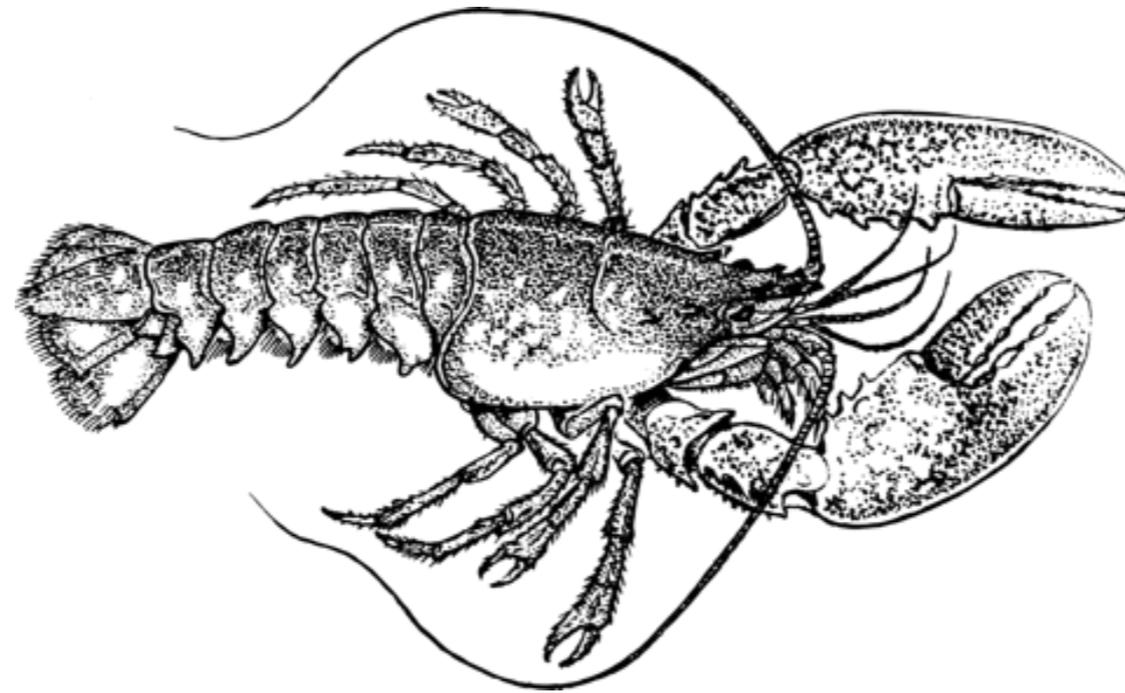
1. Learn content on physiological and neurological effects of stress and the ways in which these inner responses show up in our outer behaviors.
2. Identify circumstances that produce and maintain your unique stress responses and related behaviors.
3. Develop a self-management system for beginning a meditation practice, including ways to measure changes that may result from your practice over time.

In this course, we address:

1. What we know about stress
2. Effects of stress on the body
3. Effects of stress on behavior
4. Identifying unique stress-related behaviors
5. Information and research on meditation for children and adults
6. Starting your meditation practice
7. Tracking potential effects of meditation on your stress-related behaviors

Let's get started!



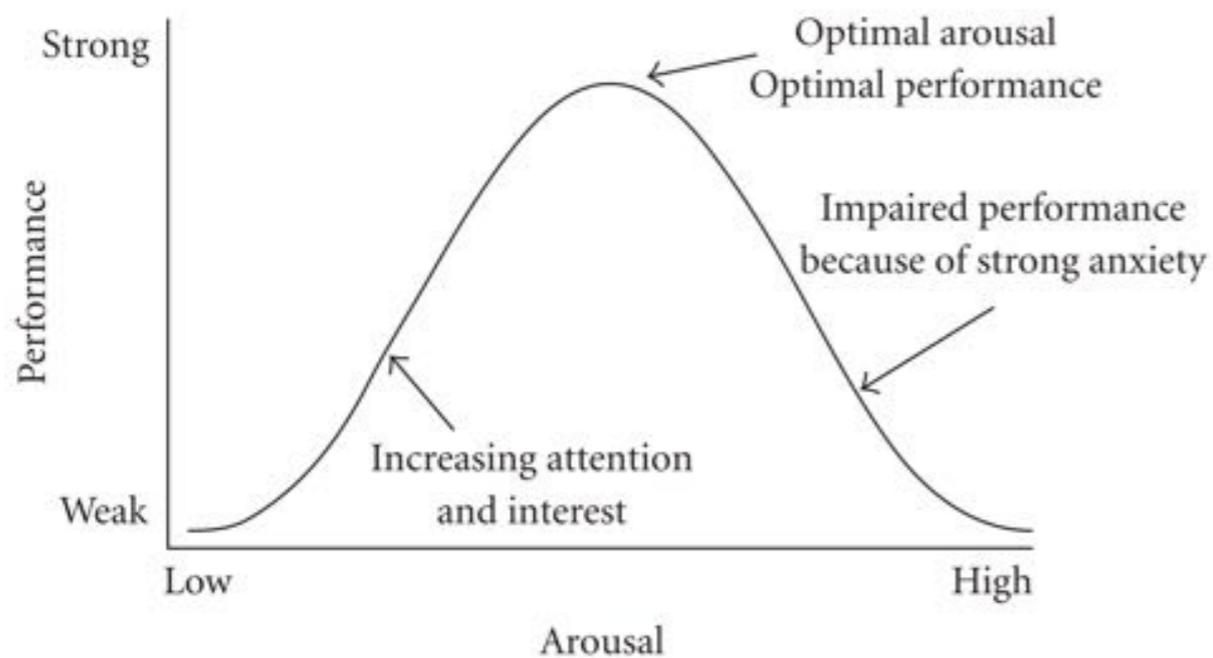


[Be a lobster](#)

Stress in itself is not a behavior, it is a condition under which behaviors occur.

If we can manage our states of stress through antecedent interventions such as meditation, we can hypothetically decrease, prevent or redirect harmful or non-productive behaviors associated with this state and, also hypothetically, replace them with behaviors that occur when we are in a more relaxed state.

A Note About “Good” Stress and “Bad” Stress



Yerkes-Dodson law



18,534,583
Views

≡+ Add | 📊 Rate | ❤️ Like | 🔄 Recommend

Kelly McGonigal at TEDGlobal 2013

How to make stress your friend



HOW **STRESS** AFFECTS THE BODY

BRAIN

Difficulty concentrating, anxiety, depression, irritability, mood, mind fog

CARDIOVASCULAR

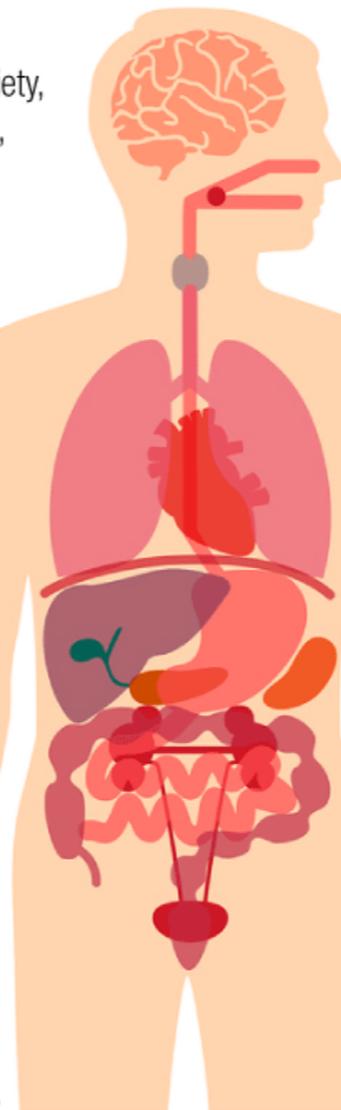
higher cholesterol, high blood pressure, increased risk of heart attack and stroke

JOINTS AND MUSCLES

increased inflammation, tension, aches and pains, muscle tightness

IMMUNE SYSTEM

decreased immune function, lowered immune defenses, increased risk of becoming ill, increase in recovery time



SKIN

hair loss, dull/brittle hair, brittle nails, dry skin, acne, delayed tissue repair

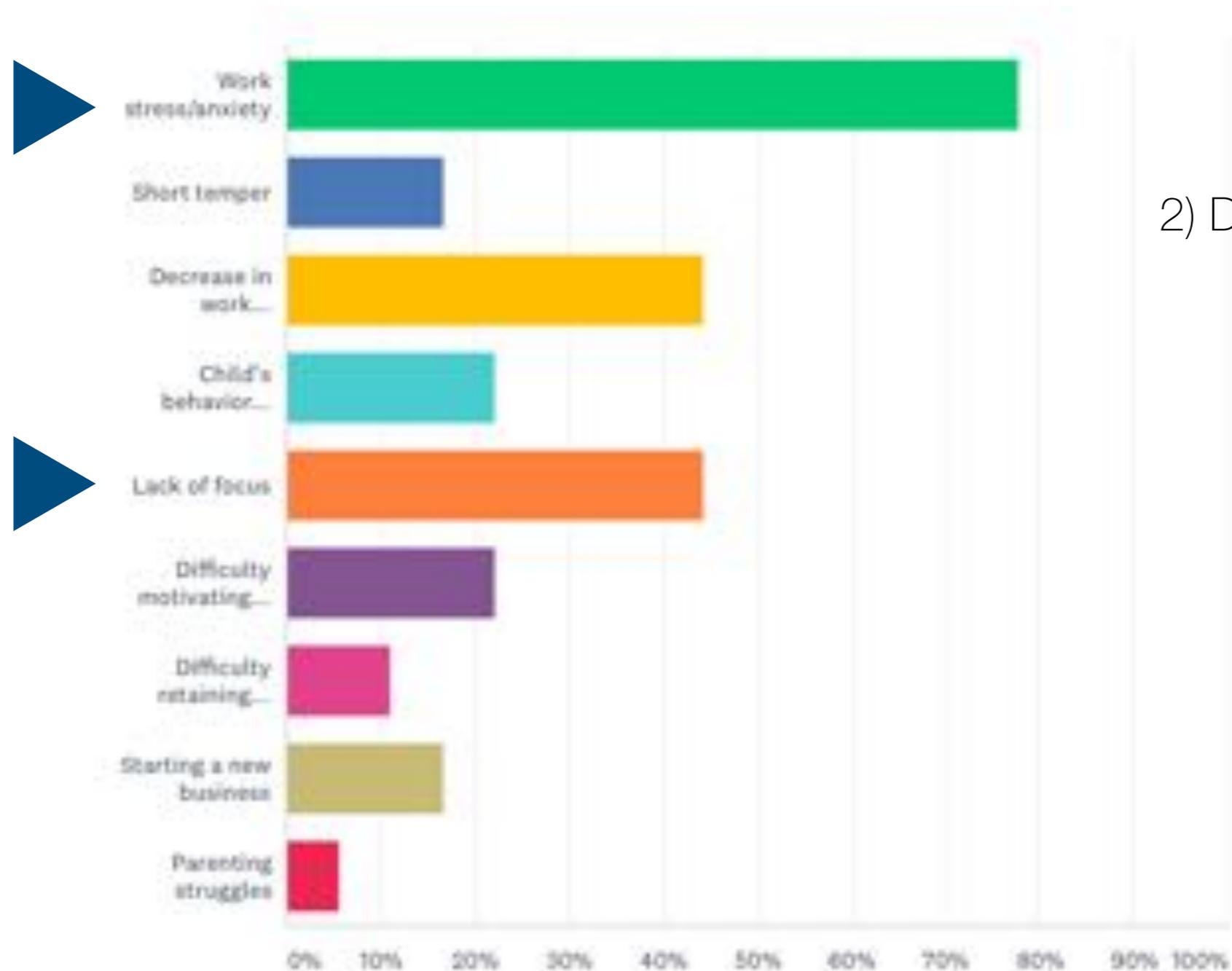
GUT

nutrient absorption, diarrhea, constipation, indigestion, bloating, pain and discomfort

REPRODUCTIVE SYSTEM

decreased hormone production, decrease in libido, increase in PMS symptoms

Survey Results: Data on Life Stressors



Top 3:

- 1) Work stress/anxiety
- 2) Decrease in work satisfaction
- 3) Lack of focus

***Public health
issue.***

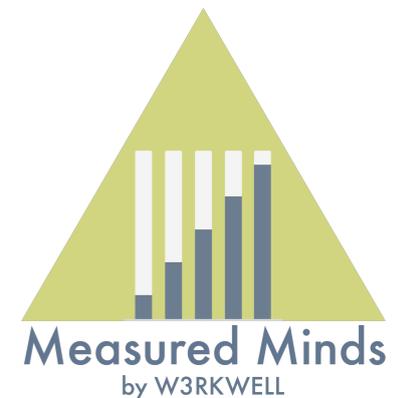
The WHO claims that every \$1 invested in scaling up treatment for depression and anxiety leads to a return of **\$4 in better** health and the ability to work.

Mental-health disorders **currently account for 30% of the global non-fatal disease burden.**

Despite this prevalence, investment in mental health is **failing to meet a growing need.**

The WHO estimates that governments spend on average 3% of their health budgets on mental health, with low-income countries spending less than 1%.

The study, published in [The Lancet](#), estimates that almost **10% of the world's population**, or 740 million people, are **affected by common mental problems** and a collective failure to tackle depression and anxiety costs the global economy \$1 trillion each year.





At some point in their lives, **1 in 4** people will have an anxiety disorder (National Comorbidity Study (Kessler, Berglund, Deltner, et.al., 2005)

The W.H.O. reports this number to be on the rise.

Autism Parenting Stress Index: Initial Psychometric Evidence

Louisa M. T. Silva · Mark Schalock

4x

Maternal Cortisol Levels and Behavior Problems in Adolescents and Adults with ASD

Seltzer, Marsha Mailick; Greenberg, Jan S ; Hong, Jinkuk ; Smith, Leann E ; Almeida, David M ; et al. **Journal of Autism and Developmental Disorders; New York** Vol. 40, Iss. 4, (Apr 2010): 457-69.

Cortisol levels similar to those of combat veterans

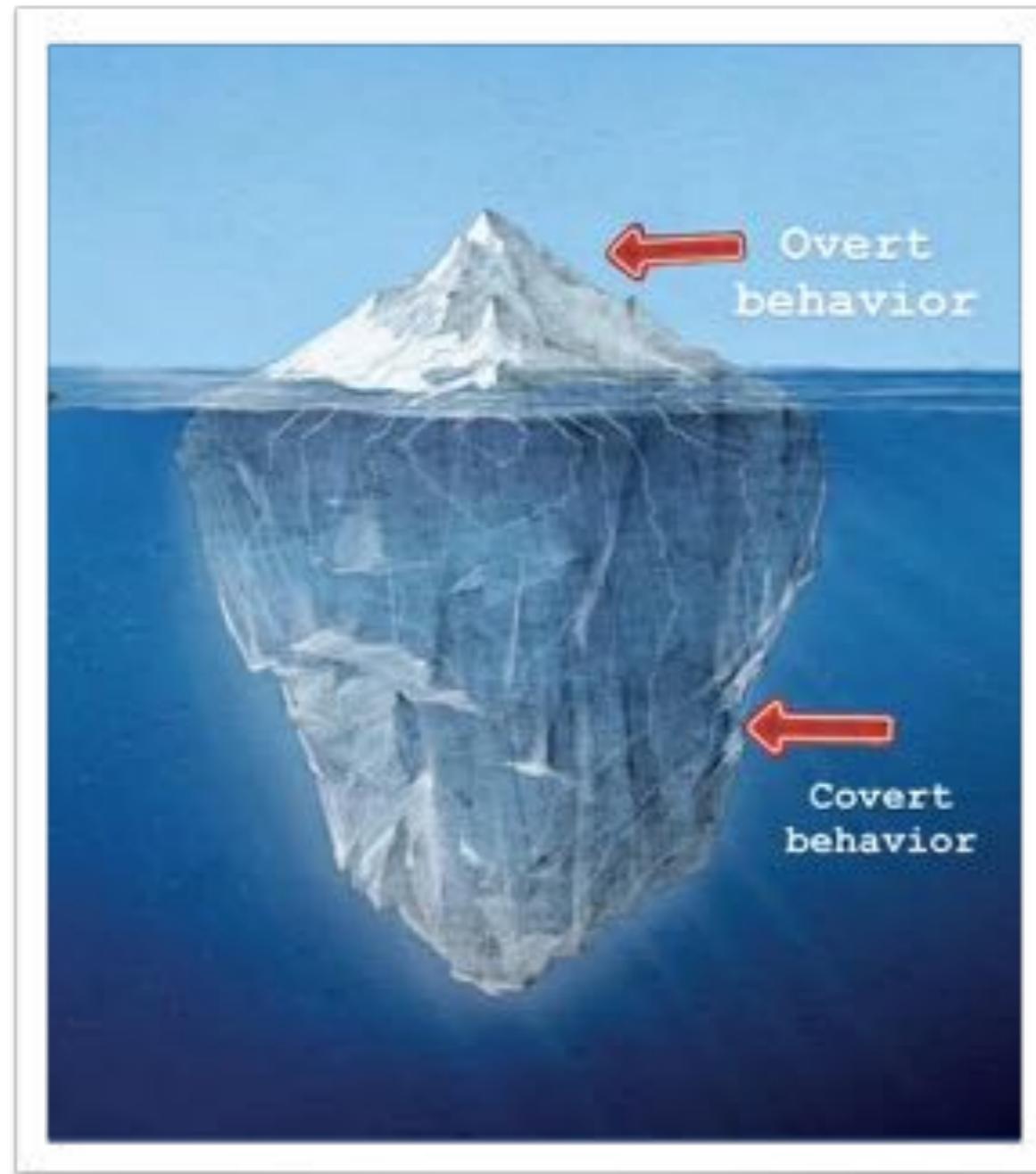
Burnout



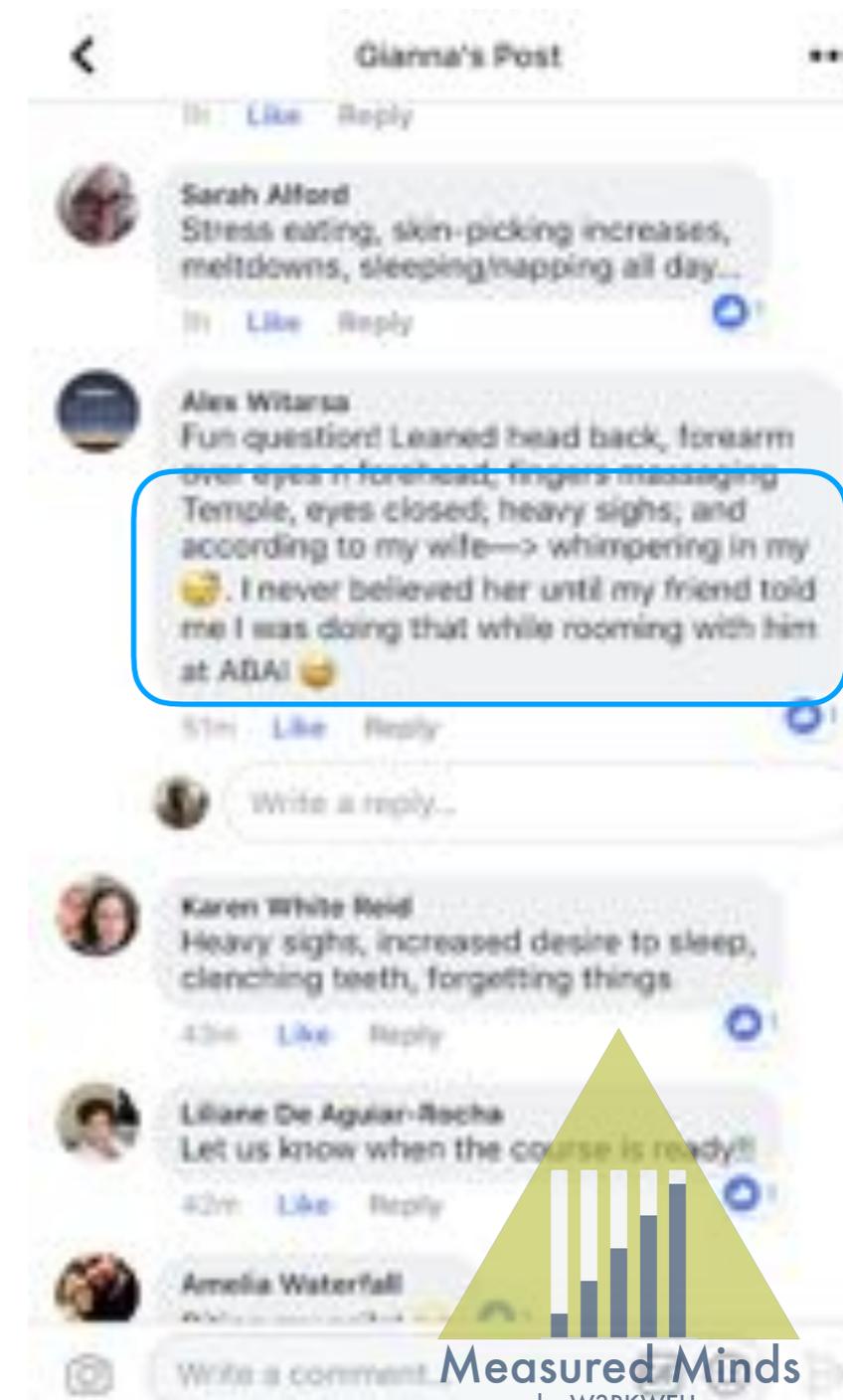
More tasks to do than time to do them, low task to reward ratio

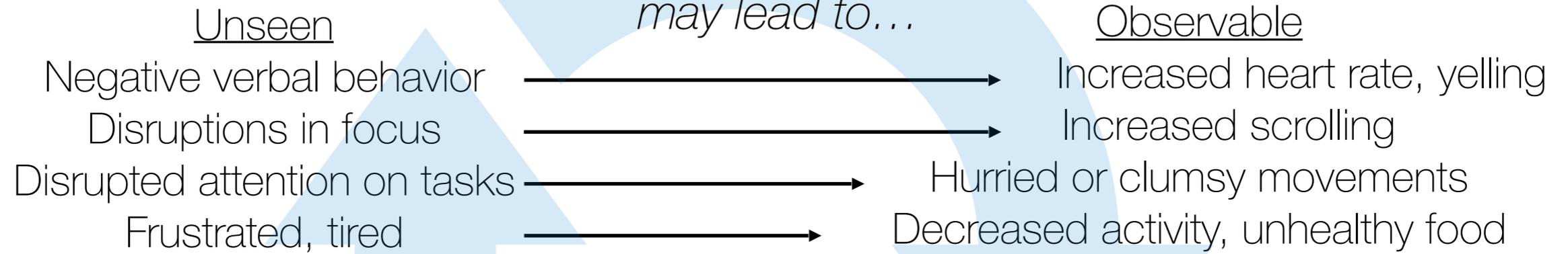
Managing stress responses

Covert vs Overt Behaviors

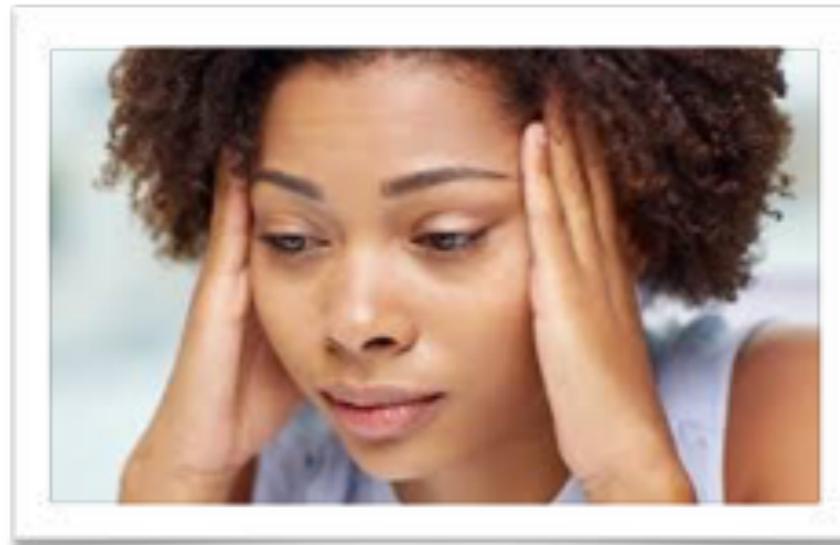


Inner Stress Responses = Outer Behaviors





Time to Define and Identify!



Individual Stress Behavior (ISB): “Any action a person takes when simultaneously experiencing typical physiological stress responses (i.e., increased heart rate, sweating, or rapidly occurring thoughts) that is misaligned or in opposition to their health, values and/or goals”



Meditation as a Behavior

Defining meditation in behavioral terms:

Sitting upright on a cushion, chair or other surface with a straight back while inhaling and exhaling voluntarily for a duration of 4 seconds, and redirecting without judgement your attention back to the breath or another stimulus (e.g., a candle flame). May or may not include “statements of disempowerment” to acknowledge thoughts (e.g., naming a thought “thought”, silly voices, counting breaths or stating to oneself “I’m noticing I’m distracted today”).

Meditation vs “Mindfulness” = Behavior vs Outcome

Meditation **is**:

Ancient

Eastern origination

Religion-based (or not)

Challenging (simple, not easy)

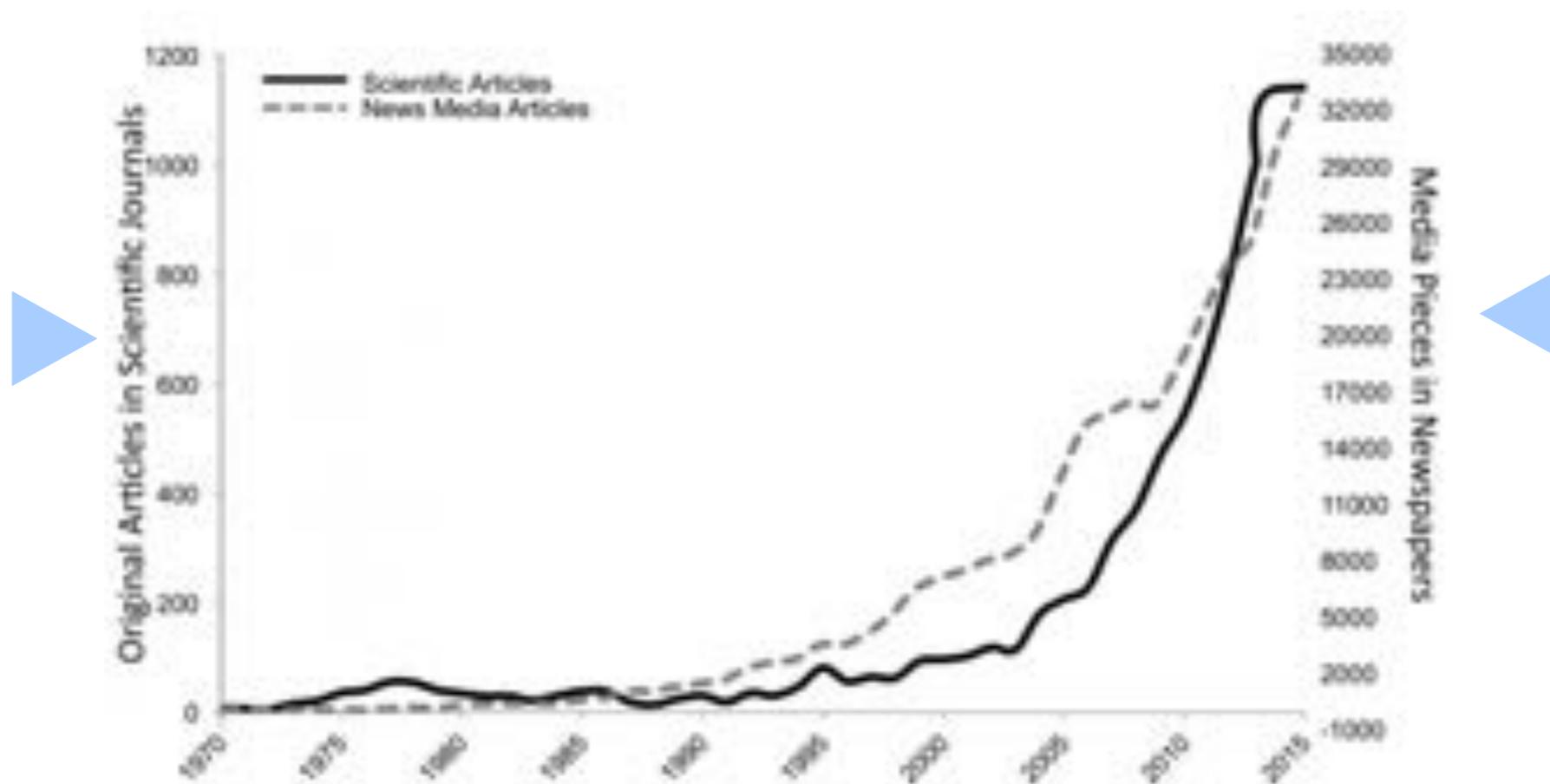
A practice

Results in state and trait effects

Dose-dependent

Universally focused on sustaining attention in a certain way

A Growing Field for Media and Science

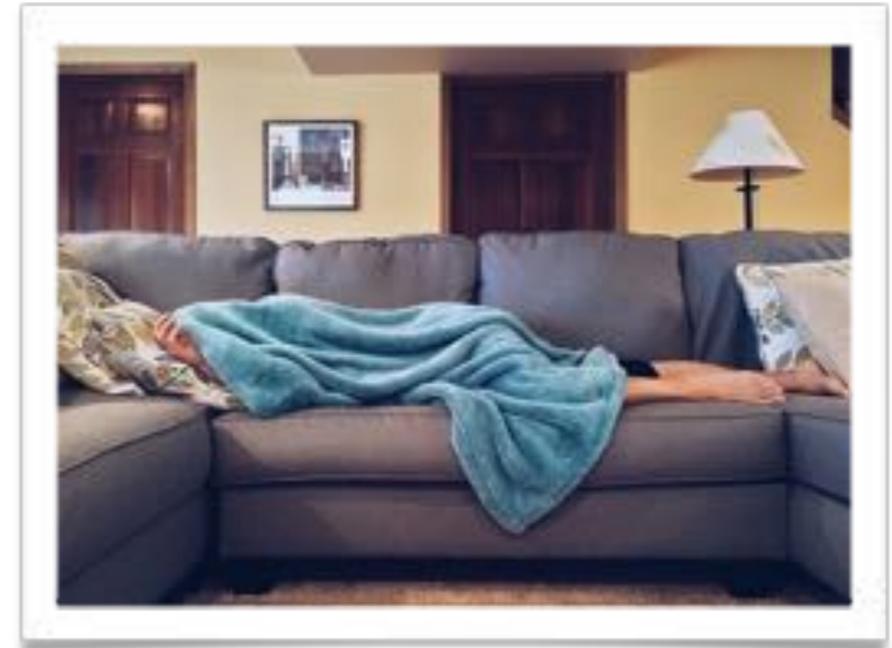


Rapid growth and capitalist endeavors have made some way.



Meditation is **not**:

- A cure-all
- “Resting” or passive
- A solely religious act
- Emptying your mind of thought
- (Only) for diagnosed disorders
- One dimensional, selfish
- *Goal-oriented



Meditation Behavior & Stress Behavior

- Meditation ▶ Decreased stress activity in the brain (VMPC)
▶ Improved physiological stress recovery (teachers)
▶ Improved attentional control

Less physical stress responses = Lower frequency or intensity of stress-related responses

Hunger Stress ▶ Reaction
▶ Reaction

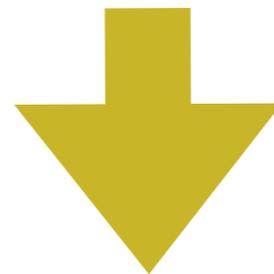
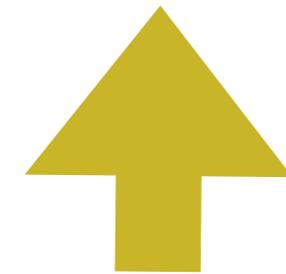
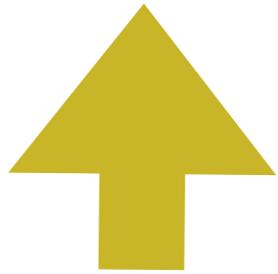
Meditation and Response Latency (time):

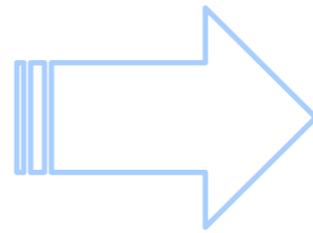
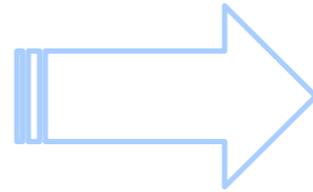
Many researchers have found that meditation decreases reactivity to stimuli by analyzing fMRI images for amygdala activity.

Kral, T. R., Schuyler, B. S., Mumford, J. A., Rosenkranz, M. A., Lutz, A., & Davidson, R. J. (2018). Impact of short-and long-term mindfulness meditation training on amygdala reactivity to emotional stimuli. *NeuroImage*, 181, 301-313.

Act of delaying reactions and instead choosing a more value-aligned alternative.

Remember: Stress in itself is not a behavior!

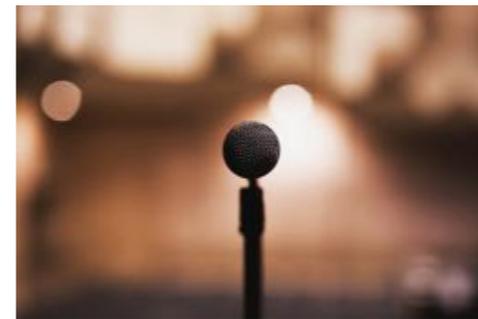




Science has shown:

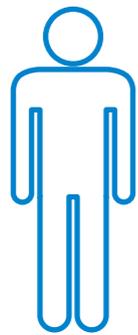
Significant increase in attending (cognitive control)- *Universal in meditation*

Example: The “cocktail party effect” (improved cortical specificity)

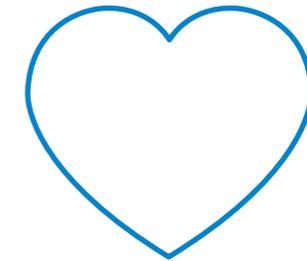


Neuroscience lingo:

Research and brain studies have demonstrated that people who meditate have increased cortical specificity and sensitivity in noticing salient information, but also have the increased ability to shift attention back to the original stimulus (i.e speaker/activity)



Science has shown:



Increased compassion

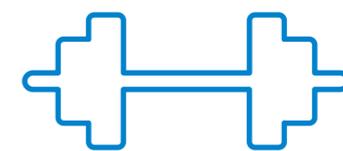
Increased self-management

Improved well-being as a result of decreased stress activity in the brain

Reversal of effects attained with overuse of technology

Improvements on resilience (physiological stress recovery) measures

Quicker recovery of blood pressure during stress assessments in teachers



What the Science Says About the Effectiveness of Meditation

Many studies have investigated meditation for different conditions, and there's evidence that it may reduce blood pressure as well as symptoms of irritable bowel syndrome and flare-ups in people who have had ulcerative colitis. It may ease symptoms of anxiety and depression, and may help people with insomnia.

Read more about meditation for these conditions:

- ▼ Pain
- ▼ For High Blood Pressure
- ▼ For Irritable Bowel Syndrome
- ▼ For Ulcerative Colitis
- ▼ For Anxiety, Depression, and Insomnia
- ▼ For Smoking Cessation
- ▼ Other Conditions

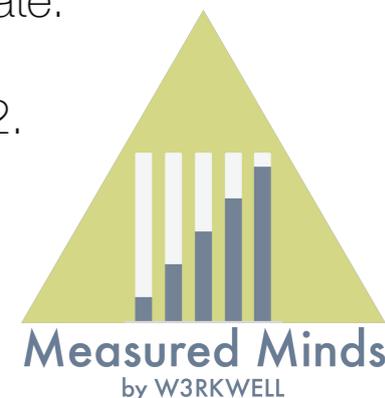


National Center for
Complementary and
Integrative Health

NIH... Turning Discovery Into Health

“Results of an NCCAM-funded study suggest that 8 weeks of meditation may have an effect on brain function that persists even when someone is not meditating.”

Desbordes G, Negi LT, Pace TWW, et al. Effects of mindful-attention and compassion meditation training on amygdala response to emotional stimuli in an ordinary, non-meditative state. *Frontiers in Human Neuroscience*. 2012;6:292.



The Future of Education



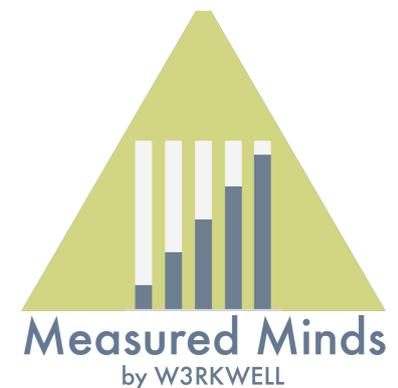
Train-the-Trainer model for teachers, students
(Dept of Ed.)

The Future of Education

Mindfulness for Teachers: A Pilot Study to Assess Effects on Stress, Burnout, and Teaching Efficacy

Lisa Flook¹, Simon B. Goldberg¹, Laura Pinger¹, Katherine Bonus¹, and Richard J. Davidson¹

<https://centerhealthyminds.org/assets/files-publications/FlookMindfulnessMindBrainAndEducation.pdf>



MINDFULNESS GOES TO SCHOOL: THINGS LEARNED (SO FAR) FROM RESEARCH AND REAL-WORLD EXPERIENCES

[Randye J. Semple](#), Ph.D., [Vita Droutman](#), Ph.D., and [Brittany Ann Reid](#), M.A.

Program	Began	Target Population(s)	Primary Program Aims	Instructional Format	Key Components	Duration
Master Mind (MM)	2009	Grades 4–5	Mindfulness education; substance abuse prevention	Teacher-led curriculum	Mindful breathing; “mindful journeys” (e.g., body scan and mindful eating); mindful movement; everyday mindfulness; daily home practice	15 minutes, daily for 4 weeks
Moment Program (MP)	2010	Grades 6–7	Promotion of healthy peer relationships; improve academic	Teacher-led curriculum	Similar to Master Mind	15 minutes, daily for 4 weeks

MINDFULNESS GOES TO SCHOOL: THINGS LEARNED (SO FAR) FROM RESEARCH AND REAL-WORLD EXPERIENCES

[Randy J. Semple](#), Ph.D., [Vita Droutman](#), Ph.D., and [Brittany Ann Reid](#), M.A.

Master Mind

EF scores were significantly higher for students in the program

Behavior checklist scores showed reductions in social and aggression issues,
and girls showed less anxiety

Moment Program

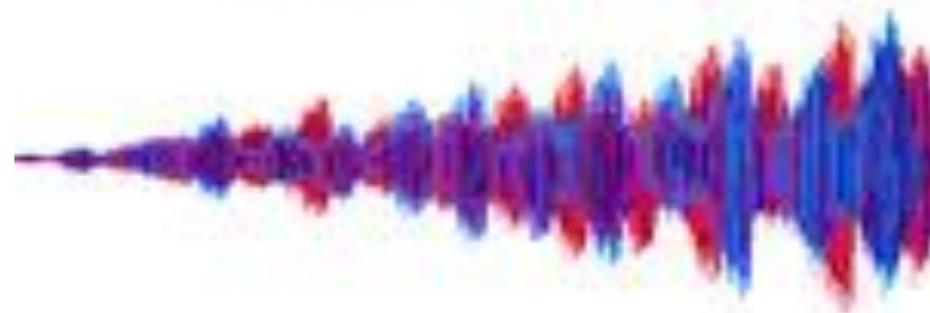
Significant reductions in aggression and social problems

Improvements in behavior regulation and metacognition were reported for the MP group.

No significant improvements were found for EF.



Altered Traits



Science Reveals How
Meditation Changes Your
Mind, Brain, and Body

NEW YORK TIMES BESTSELLING AUTHORS
Daniel Goleman & Richard J. Davidson

Dr. Jim Cahill
(biofeedback)



Rigorous Study

After three days of intensive practice, new meditators were found to have increased connections between the regions of the brain responsible for self-focused thought and their default mode. This means, there is evidence that **during meditation, newbies can keep the brain from wandering** by quieting the area of the brain responsible for rumination or perseveration on thoughts.

Cognitive control: After just three 10-minute sessions of focused-breath meditation, college students **significantly increased their attentional skills** on tests when compared to a control group asked to browse internet sites. The most significant **improvements were found in chronic multi-taskers** who originally did poorly on the tests.

Meditators engaged in focused breathing for **8 minutes lessened their mind-wandering** (compared to the who relaxed or read newspapers). Researchers noted an additional result of improved working memory (if you're not paying attention when information is given it is harder to retain)

Daniel Goleman and “Richie” Davidson found the least amount of time one could meditate and **still receive state benefits to be 8 minutes**

Response inhibition: Meditators were found to have **increased impulse control after 3 months and still at 5 months.** This was also correlated to increased emotional wellbeing.

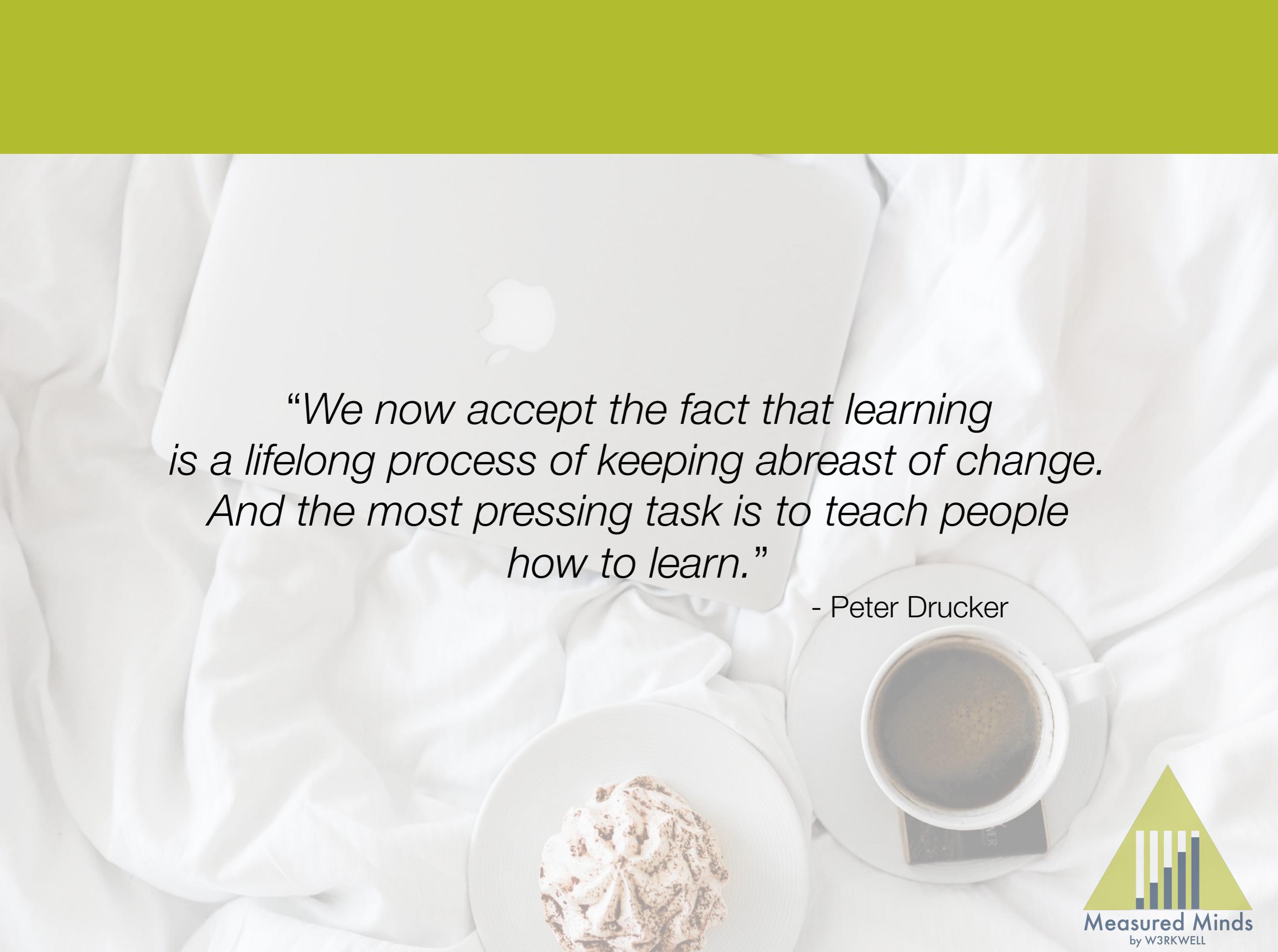




[The Sushi Train](#)

If it's so great, why doesn't everyone do it?





“We now accept the fact that learning is a lifelong process of keeping abreast of change. And the most pressing task is to teach people how to learn.”

- Peter Drucker

Helpful Tips for A Novice Meditator

1. Have your own buy-in (tie to values)
2. Understand the potential behavioral and health benefits
3. Choose a mastery criteria to continue shaping your behavior over time (i.e., X days)
4. Commit to the intervention (consistency in interventions leads to success)
5. Understand the environmental variables that lead to stress-related behavior
6. Learn how to notice without judgement thoughts that may derail or disrupt your practice
7. Progress, not perfection, when acquiring a new skill
8. Continue pairing meditation with immediate rewards until natural benefits kick in

Common Meditation Challenges

- Markedly harder than physical control
- Wired to resist non-judgement and attending to stimuli
- Finding your “dose” (“set and start” vs building)
- Racing thoughts, inability to stop (you don’t have to stop!)

BE SILLY
←—————→
be honest
—————→
BE KIND

Start
here

Knowing Your “Why”

Motivation

Reward

Lifestyle Integration

Momentum

Sustainability



Knowing Your Barriers

Response effort/Ease

Fluency

Time management

Everyone else/Life

Competing reinforcement

Things to Consider

Response Effort

The response effort required to begin learning this new skill should be low. Set up your environment ahead of time to decrease the response effort needed.



Setting Up Your Space

Take what we know about behavior and apply it to your space!
To set yourself up for success, your activity should be:

Easy

Very accessible during your timeframe

Able to set up easily every day (if necessary)

Low distractions

Rewarding

Aesthetically pleasing (for you)

Calming

Involve the environment (stimuli)

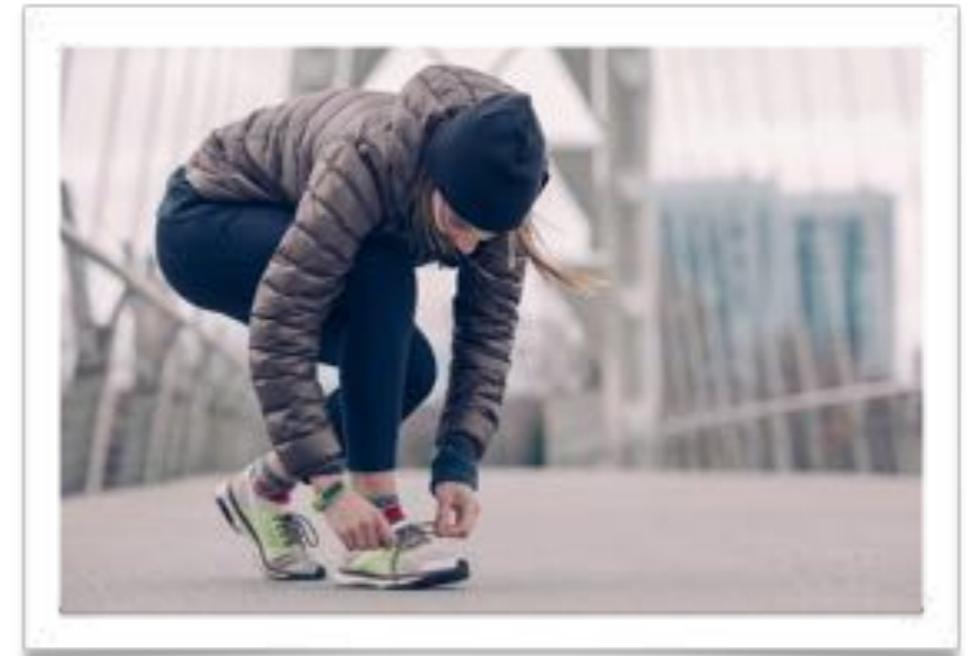
Reinforcement

“Behavior goes where reinforcement flows”



Things to Consider

Planning Your Rewards



Reward yourself with immediate and certain activities, items or attention.
Be honest about how you reward yourself and ***what is meaningful to you*** that day or week.

HOW TO START MEDITATING

BREATH

Don't try to "calm your mind." Instead, appreciate the sensations of your breath in the same way that a wine snob tastes a cabernet. When your mind starts wandering away into thoughts, just recognize that you're thinking. Then return to appreciating the sensations of your breath.

ARMS/HANDS

Relax your shoulders and arms, letting your hands rest on your thighs. Alternately, place one hand on another in your lap.

LEGS/FEET

If you're sitting in a chair, keep your feet flat on the floor and your spine straight. If you're sitting cross-legged on a cushion, the important thing is to have your knees below your hips. If you need a higher seat, make one.

EMOTIONS

Long-term meditators show increased size in brain regions associated with emotional regulation. "Larger volumes in these regions might account for meditators' singular abilities and habits to cultivate positive emotions, retain emotional stability, and engage in mindful behavior," according to a UCLA study.

EYES

Decide what you're going to do with your eyes. If you want the experience to be more body-based, close them. If you want to feel more anchored in the space you're in, keep them open.

TIME

Meditation isn't about length; it's about frequency. In the same way you don't get strong by lifting one giant weight one time, you should try and sit regularly. Five or ten minutes a day is a great start.



Sources: "Start Where You Are: A Guide to Compassionate Living" by Pema Chodron; "The Miracle of Mindfulness: An Introduction to the Practice of Meditation" by Thich Nhat Hanh; "10% Happier: How I Tamed the Voice in My Head, Reduced Stress Without Losing My Edge, and Found Self-Help That Actually Works—A True Story" by Dan Harris

BUSINESS INSIDER

Starting Your Practice

[3-Minute Gratitude Guide](#)

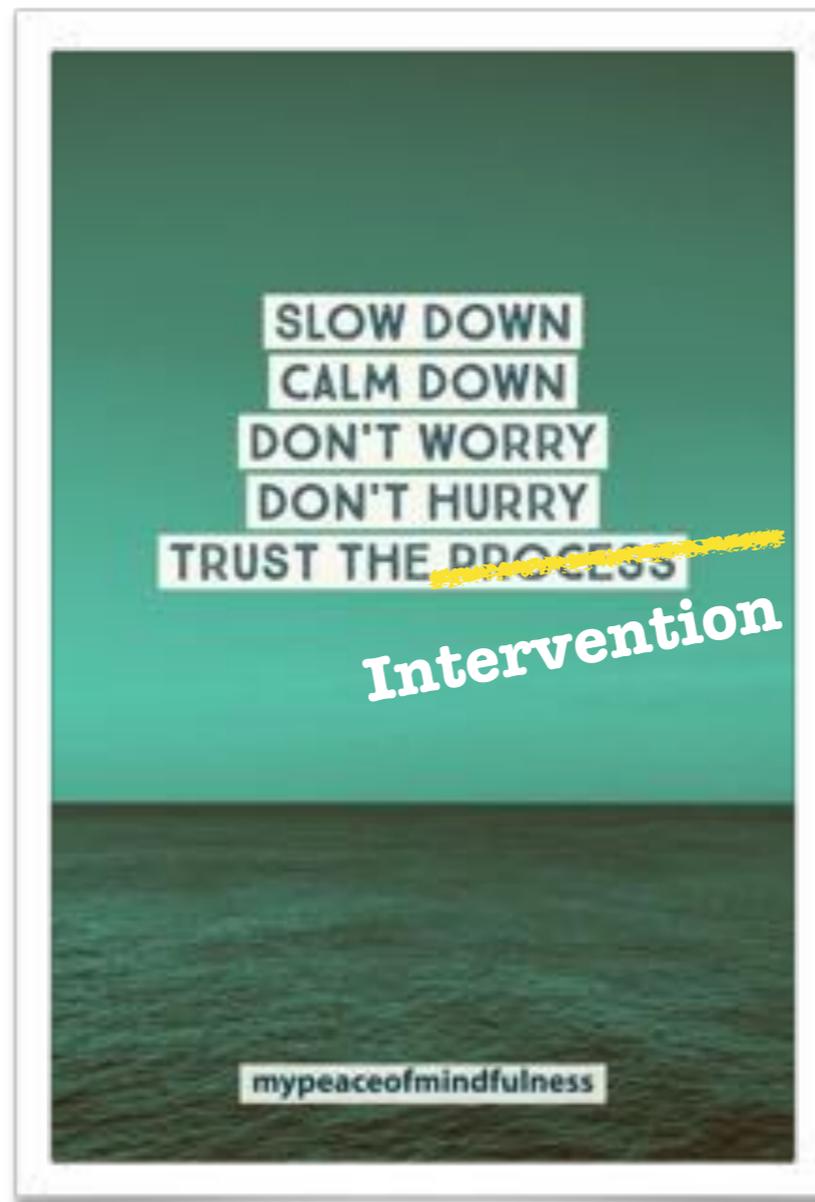
[5-Minute Guide](#)

[7-Minute Counting Breath Guide](#)

[8-Minute Body Scan](#)

Keep Calm, It's a Practice

Behavior vs Results



Things to Consider

Have fun

Try not to take yourself too seriously.

Mess up your plan?

Not riding a unicorn to work after a few weeks?

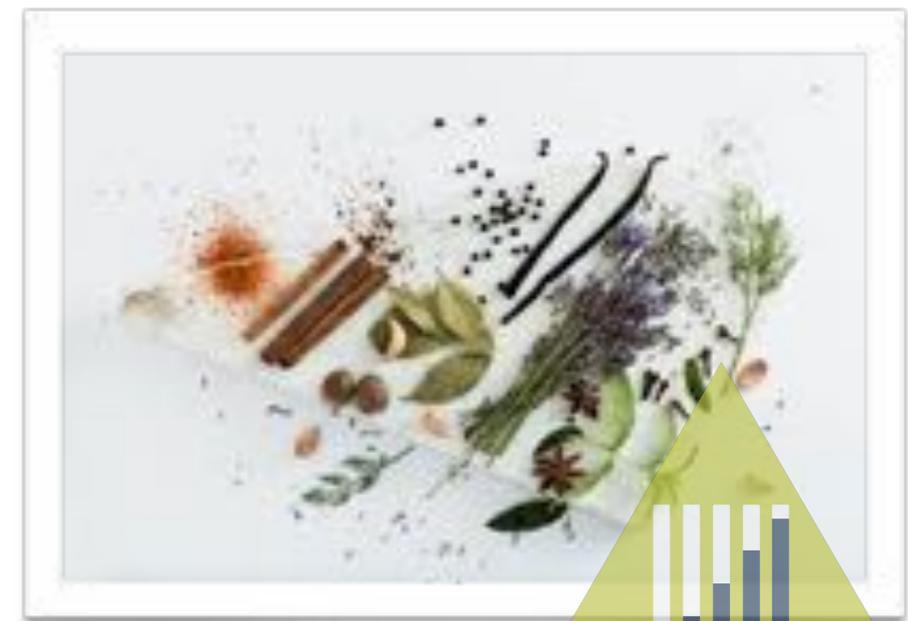
Have to use the bathroom in the middle of your 10 minute almost-to-mastery session?

Keep calm. It's just meditation.



Options:

Visual vs. Auditory
Pairing stimuli, senses
Starting points
Seat
Attentional activities
Technology
Thoughts





When Can Technology Be Helpful?



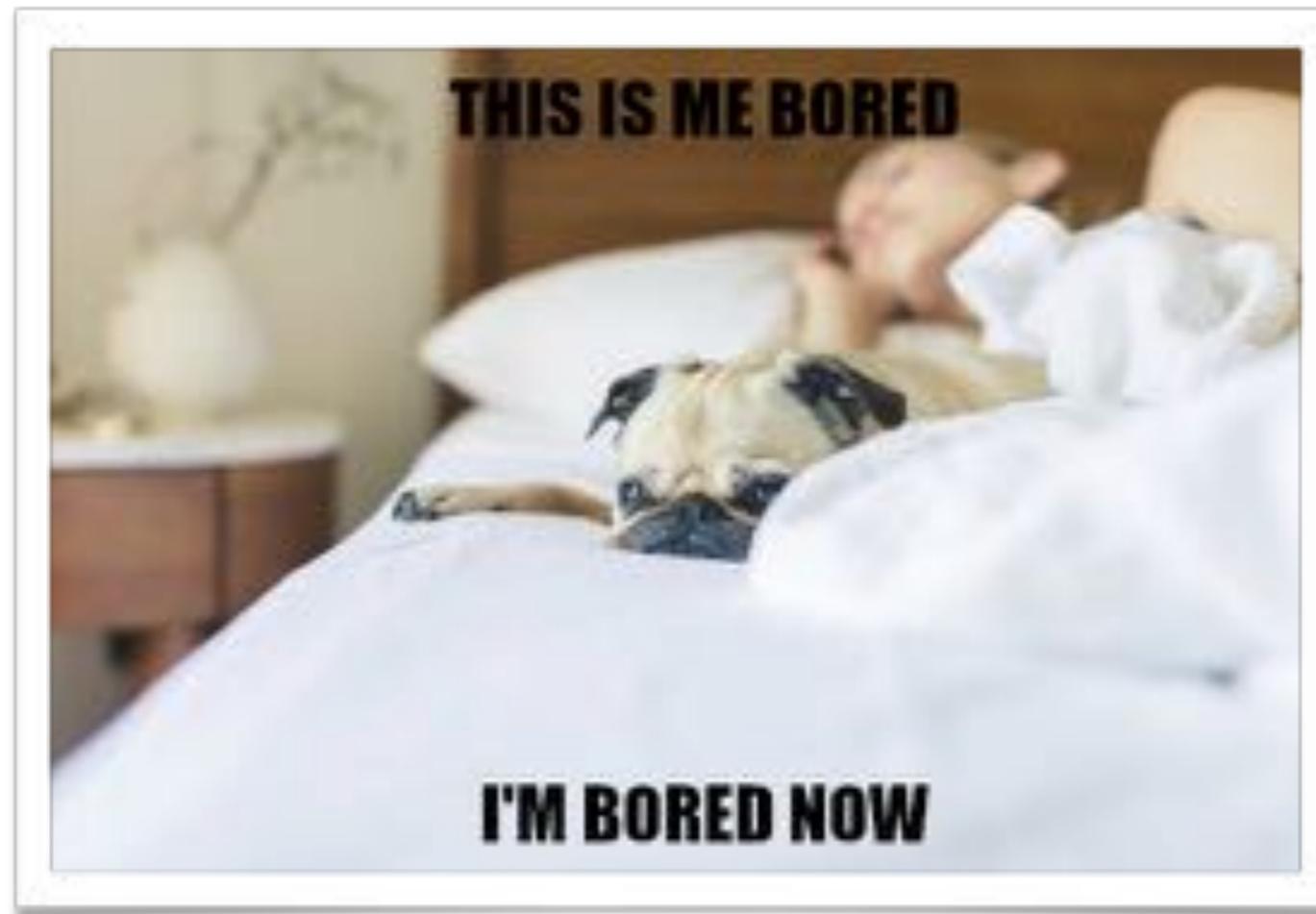
Calm

Headspace

Momentum

Reporter

“Boredom” is natural.



Varying Your Practice

Your living room couch
for a gratitude session

Walking or sitting in
nature
for a more active,
focused attention
session

Your living room floor
for a more focused
session

Your front porch
for a more community-spirited
session

Varying Your Practice

If you are using the same guided meditation or song during your practice everyday, consider changing that up, too. We become habituated to auditory stimuli (what we hear) as well as visual stimuli.

Give your brain access to novel stimuli.

Step 1: Define + Measure

1a) Examine your stress-related behaviors by completing the sentence below.

When (antecedent event) happens, I feel (covert behavior) and respond by (overt behavior), which results in (consequence).

1b) Take a baseline measure (frequency, duration, etc) of 1-2 stress-related behaviors using Momentum or pen and paper. If you have more than 1-2 stress behaviors, consider which behaviors, if reduced, would have the most socially significant impact on your life and/or values.

Step 1: Define + Measure Your ISB

Example: When my boss asks me to perform tasks for which I have not been trained, I typically feel my heart race and instead respond by choosing tasks for which I am confident. This allows me to escape feeling incompetent and/or dealing with reprimands from my boss.

*What do you do? How often do you do it?
(don't guess, take some data!)*

The perils of verbal report

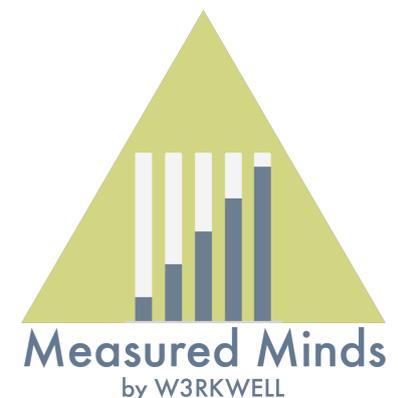
Step 2: Set Up and Execute Intervention

2a) Ensure you fully understand how to meditate and can demonstrate this behavior according to your definition.

2b) Set your “dosage” (at least 8 minutes per day)*

2c) Reward! Meaningful, immediate.

Notes: *Try not to focus too intently on how long you should meditate for, this can and does lead to more distracting thoughts.*



Step 3: Maintenance

Determine what changes, if any, need to be made in order to improve the effectiveness of your intervention.

Tips to Maintain Your Progress

Response prompts- Apple Watch reminders, calendars, accountability partner

Remove unnecessary items associated with distraction- Pets, bleeping phones, orienting toward a low-stimulation part of your home

Involve the senses- Candles, specific pillow, music

Create visual, public reminders and posts- Discuss with supporters for social, positive reinforcement



Overview

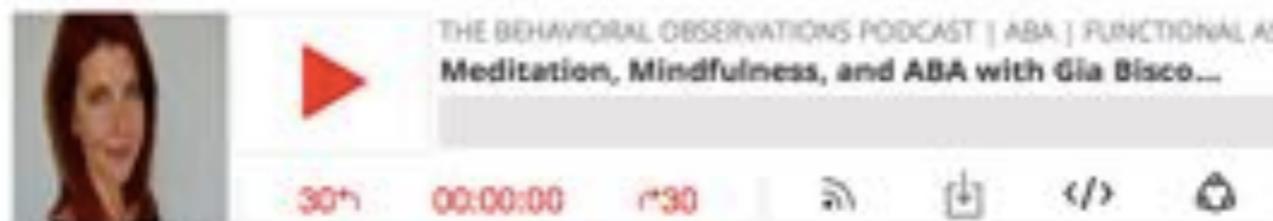
- Stress can lead to both harmful and beneficial responses, and it is possible to disrupt and redirect harmful responses in favor of more value-aligned behavior.
- Meditation has been shown to produce measurable changes in children, adolescents and adults in early psychological and neuroscience research, especially in attentional control.
- When building your practice, focus on building behavioral momentum with daily practice
- Keep at it! The more you practice, the better the benefits.

The Behavioral Observations Podcast

Stimulating talk for today's behavior analysts

Mindfulness, Meditation, and ABA with Gianna Biscontini: Session 53

It seems as if you can't escape the term "mindfulness" these days... and if you're like me, you hear people using that term interchangeably with meditation.



Well in Session 53 of The Behavioral Observations Podcast, I chat with Gia Biscontini from **W3RKWELL**, and she enlightens me about not only the proper use of these terms, but also the benefits one can expect by adopting a consistent meditation practice.

I certainly learned a lot in this episode, and Gia may have even convinced me to give meditation a try...

References

Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime Prevalence and Age-of-Onset Distributions of DSM-IV Disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):593–602. doi:10.1001/archpsyc.62.6.593

Semple, R. J., Drouman, V., & Reid, B. A. (2016). MINDFULNESS GOES TO SCHOOL: THINGS LEARNED (SO FAR) FROM RESEARCH AND REAL-WORLD EXPERIENCES. *Psychology in the schools*, 54(1), 29-52.

Desbordes G, Negi LT, Pace TWW, et al. Effects of mindful-attention and compassion meditation training on amygdala response to emotional stimuli in an ordinary, non-meditative state. *Frontiers in Human Neuroscience*. 2012; 6:292.

