Why Meditate -
How's it Help with Stress?

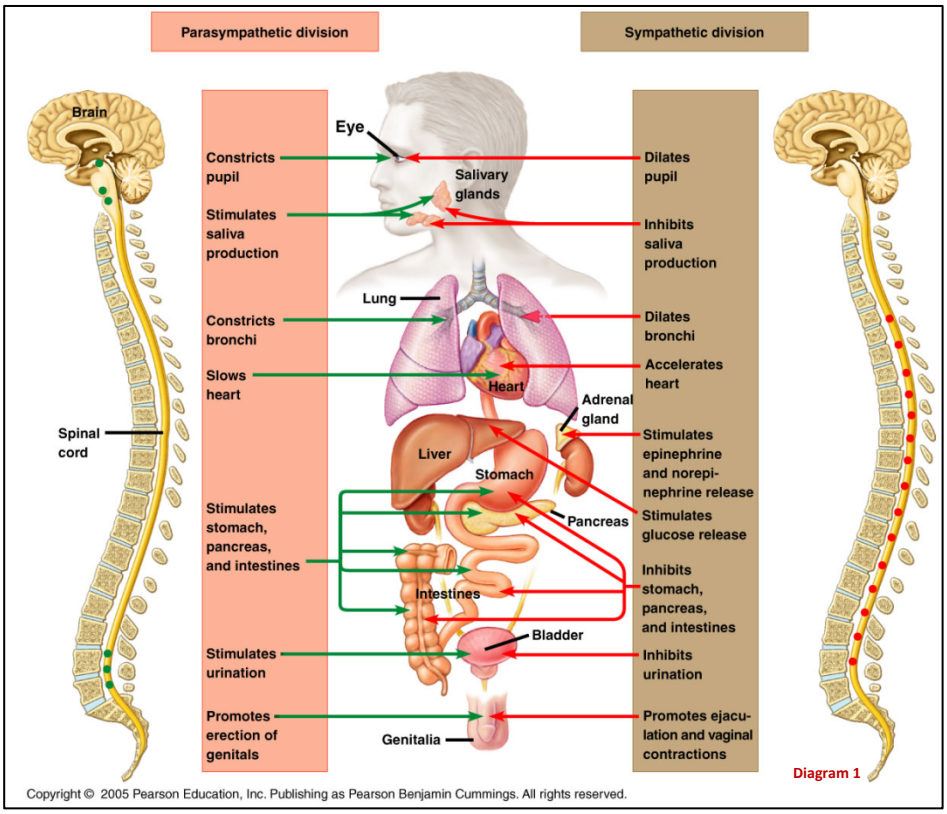
In some ways, humans have been '*studying*' the effects of meditation on health and well-being for thousands of years. However, taking *meditation into the laboratory* is a more recent endeavor. Over the past 4-5 decades, a growing body of research has emerged. This article outlines how meditation and mindfulness influence our responses to stress:

1) ***Biologically:*** ***Changes our body's biological reactivity to a sense of threat.***
2) ***Psychologically:*** ***Increases our ability to make conscious choices***, including steps to soothe and calm.
3) ***Neurobiologically:*** ***Rewires the brain*** to reinforce new behavior patterns (facilitating 1 and 2).

Biological Changes: Soothing the Animal in Each of Us

First, ***what is stress?*** An image or feeling likely comes to mind. Consider the physical sensations in your body when you're: tolerating micro-aggressions in your workplace; preparing for a talk or presentation; your kids are wailing in the back seat of your car; preparing to visit family, struggling financially. Even if we can't always influence the stressful external circumstances, with some practice we **can** influence our response to stress..

These are a cluster of reactions indicating the "*animal*" in us perceives threat and the Sympathetic Nervous System **(SNS)** is turned on HIGH. See Diagram 1. The SNS can activate even if the '*threat*' is not imminent, but chronic and erosive: surviving institutionalized racism every day; caring for a disabled child or loved one with cancer; navigating the world yourself disabled, prolonged unemployment. All these can activate the SNS. The same hormones, and reactivity can come into play as the SNS is turned on to ***Fight, Flight or Freeze*** reaction (Diagram 2, *pg 2).*



It's important not to vilify our body's innate ability to survive and to thrive. The problem is that **our SNS was designed to work in <u>the short term and then turn off.</u>** Even in the face of chronic stressors noted above, our nervous system, physical and mental health benefit from meditation and mindfulness precisely as an antidote to the chronic activation. They support us to turn on the Parasympathetic Nervous System (the PSNS) switches us to a mode to *"rest and digest"*.

In addition to the ***Fight-Flight- Freeze reactions,*** there is also the ***Tend -Befriend Response*** pathway. It is more commonly associated with female gendered people, and is easier to activate with awareness. It is an expression of '*survival*' secured through ***tending*** (caring for off spring or those close to us) and ***befriending*** (seeking social support to face the challenge). While not accessible in that first triggered moment of increased heart and respiratory rate, a

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Tend-Befriend response can be invoked in reaction to stressors with awareness and intention. There is strong evidence that meditation and mindfulness can influence this biological cascade and our choices within.

In the early 1970s Cardiologist Herbert Benson began introducing his own cardiac patients to meditation. He found that regular meditation resulted in slower respiratory rate, heart rate, blood pressure, metabolism, at the same time as increased muscular relaxation and nitric oxide. Nitric oxide helps the following processes: ● Nerve cell conductivity with the brain ● Reduces inflammation ● Assists with gastric motility ● Assists healthy immune response ● Improves sleep ● Regulates blood pressure through arterial dilation. (Benson 1975)

Benson's findings have been reaffirmed by many studies over these past decades (Kabat-Zinn 1990, Brown, Creswell & Ryan 2015). They reinforce that meditation and mindfulness have the ability to activate the PSNS, the calming system. What is remarkable is that with regular meditation practice, in as little as 5-8 weeks, the changes sustain even after we stop meditating, when we are out living our lives, facing stressors every day.

Psychological Changes: Tuning In rather than Tuning Out

So as a first step, meditation influences our biology by balancing a reactive SNS (***Fight-Flight-Freeze)***. Additionally, we can influence our stress response by how we perceive our own body's responses. When our heart starts racing and we start sweating, we can change the *story line* of what's happening. Bringing awareness to our experience we can notice the panicky, "I'm freaking OUT! I can't do this?" Right in the midst of noticing, we can change the *story line* and adopt a ***challenge*** perspective. The external experience is the same. However, the internal narrative can shift to, "My body is narrowing my focus so I can remain concentrated and make this happen! My heart is beating harder and faster, shunting more blood and oxygen to my brain so I can perform!" With this attitude pivot, the ratio of stress hormones in the body actually changes; increasing DHEA and nerve growth factor which increases confidence, concentration, performance. AND, we have to participate with awareness and intention to make this shift. (McGonigal 2015)

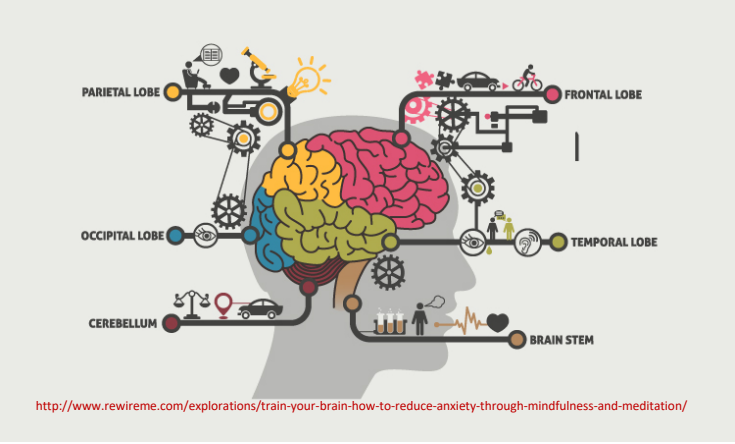
A *meta-analysis* of the past two decades of research shows clearly meditation's benefits extend beyond just the physical changes (Holzen et al 2011). Right in the midst of life's stressors, regular meditation and mindfulness practice does the following:

Increases Body Awareness: We can begin to connect particular physical sensations with experiences and emotions. We're more aware our palms are sweaty, our heart racing, tension in our neck and shoulders.

Increases Mental Focus and Attention: Many studies have concluded meditation and mindfulness increase performance on *executive tasks* (mental flexibility, attention, problem solving, working memory, planning etc..).

Decreases Reactivity to one's inner experience: When *we tune in rather than tune out,* we can bring curiosity and openness. We have more choice about how we respond, and more ability to regulate our own emotions.

Improved mental health: With all of the above, we have a very different tool bag by which to name and respond to repetitive thought patterns which contribute to anxiety and depression.



Neurobiologic Changes: Rewiring our Brains

With the use of *functional MRIs* (fMRIs) it is now possible to observe blood flow in the brain while someone is doing an activity rather than asking for their subjective report of what's happening. Below I've outlined some changes that appear to happen in the brain with regular meditation and mindfulness practice. (2015 Creswell, 2015 Tang)

- Enhanced activity of the Insula and Prefrontal Cortex; associated with self-awareness and regulation.
- Improved communication between the R and L hemispheres of the brain.
- Strengthens Prefrontal activity affecting cognitive control.
- Change of the amygdala's structure and function involved in stress reactivity.

Regular meditation and mindfulness practice support different parts of our brain to work together. They actually remodel or '*rewire*' the brain to support all the changes we discussed in the first two sections of this article. There are some limitations with this newfield of research; sample size, longevity of studies, questions about correlation versus causation. Human beings are beautifully complex. And, the trends outlined here are clear.

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Just now, take a moment to consider your own experiences. Recall how you generally respond to *stress.* Can you recall times when you have responded with more or less calm? Do you recall how that felt? How about the outcome? Would you like to explore a tool that could support a response to stress that is more relaxed, calm and confident? Guess what? You have everything you need right now. Many people have tried meditation in the past and feel like failures when their minds "won't be quiet." When we stop long enough to pay quiet attention to our thoughts, we realize how busy it is up there…**all the time**. However, the research is clear that the benefits of meditation arise in response to simply sitting down and gently, attentively drawing our minds back to our experience, to the breath again and again and again. No fancy tools or tricks required. All you need is a pair of lungs and a bit of determination.

Here are some simple tips to help you get started.

- **Start small.** 5-10 minutes every day.
- **Choose a time of day when your body and mind are alert.**
- **Choose a place where you can be alone and undisturbed**.
- **Begin with a position that is comfortable**.
- **Simply follow your breath. Allow it to be a beacon, calling you back to right here.**

One important note. Depending on our positioning in this world (gender, class, race and ethnicity, immigration status) some bodies are unfortunately…safer than others. If we've endured trauma (ex. regular food insecurity, physical or sexual abuse, white supremacy and institutionalized racism), pausing and observing the breath could actually increase our anxiety. We may already be aware of our heart rate racing, our head throbbing, or stomach tightening. Please give this practice a try and if it is too uncomfortable, please reach out to me directly so I can offer some support and guidance.
There are many other forms of mindfulness practice on my website's **Meditation +** section (Walking Practice, River Rock Practice, Noting & Naming, Listening Practice and more).

Simply notice how the breath enters and leaves your body. There is no need to manipulate or change your breath. Simply follow your breath in and out. When your mind wanders, gently follow the breath. Even when the mind is charging around like an elephant, notice the breath, returning again and again. Every time you notice yourself critiquing how you're doing, recall you are currently trying something new. Be kind and generous. Recognize this is just like watching clouds pass in the sky. You can no more catch a thought than a cloud. Simply return and follow your breath.

The links below reference organizations engaged in research on meditation and *bodymind* health. And there are a variety of other resources on my website that will be supportive and educational. **Explore**! I hope this article will be an entry point for you to consider the benefits of meditation and mindfulness in your own life. Ultimately, there's only one laboratory, and that's your own *bodymind*, your own life.

OTHER RESOURCES

Center for Mindfulness, UMass Medical School	www.umassmed.edu/cfm
Commonweal	www.commonweal.org/
Great Good in Action	http://ggia.berkeley.edu/
Mind and Life Institute	www.mindandlife.org
Mind/Body Medical Institute, Harvard	wwwmindbody.harvard.edu
Mindful Awareness Research Center, UCLA	marc.ucla.edu/
Stanford Center for Compassion and Altruism	http://ccare.stanford.edu/
Upaya Zen Brain Podcast Series	https://www.upaya.org/dharmatalks/

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