

A Mindfulness- based Approach in Reducing Stress

Learn simple ways to relieve daily stresses using Mindfulness

Insight on Stress

Stress is a universal experience. It affects all ages yet its indicators are unique to every individual. Though stress is perceived as a physiological state, studies have shown that stress is a response to combat certain physical and emotional situations such as experiencing mental stress during an interview or physical stress while sick with the flu.

Stress can be categorized into: Acute (short term), Acute-episodic (short term but frequent), and Chronic (long term). Chronic stress can lead to depression, anxiety, social isolation, reduced productivity, increased chances of chronic diseases, migraines etc.

The National Alliance of Mental Illness (NAMI) estimated 16 million American adults (7% of the population) had at least one major depressive episode in 2014. Women are 70% more likely than men to experience depression. Young adults ages

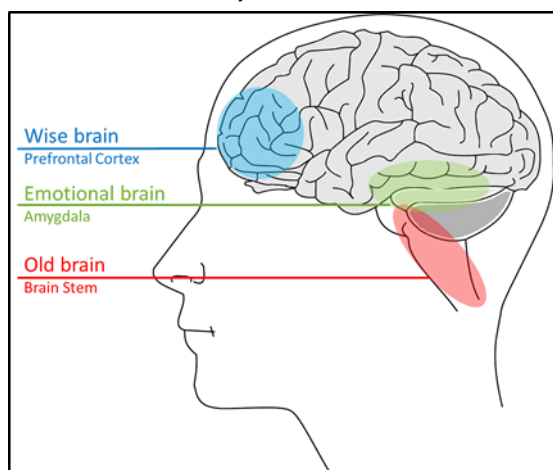
18–25 are 60% more likely to have depression than people aged 50 or older.⁽⁴⁾ These compelling statistics should not be underestimated and intentional measures should be taken to help manage stress on a daily basis.

Despite negative consequences, stress is not all bad. Short-term stress we experience helps us prepare for critical circumstances by improving alertness and focus, leading to spontaneous actions. For example, as deadlines approach, our stress responses are heightened. This results in increased motivation to finish the task in time. However, it can also result in feelings of exhaustion, anxiousness, nervousness, irritation, anger, frustration and heightened emotional reactivity. During this phase, we are more vulnerable which can lead to hasty and sometimes irrational decision-making.

The Brain Under Stress

While stress is often perceived as an emotional process, it is also physiological in nature. Stress responses originate in the brain. This complex mechanism is initiated by stress stimuli sent from our senses to the receptive center of the *“emotional brain”* (amygdala). This part of the brain is like an emergency alarm system sending *“threat”* signals to the brain and the rest of the body (see Figure 1: Part of the brain activated during stress, lateral view).

Figure 1: Part of the brain activated during stress, lateral view ⁽²⁾



Activation of the emotional brain also triggers the *“old brain”* (brain stem), creating several voluntary and involuntary reactive responses. These responses are usually *“fight”*, *“flight”*, *“freeze”* and *“faint.”* Stress hormones (such as cortisol) are also secreted. Cortisol secretion results in increased body temperature, heightened senses, shortness of breath, blood pressure, and heart rate.

Over time, these changes can result in increased blood sugar level, compromised immune system, upset digestive system, and irregular appetite.

The chronic manifestation of stress can lead to atypical physiological and emotional changes such as impulsive behavior, panic attacks, anxiety, aggression, substance abuse and violence. Stress is also one of the primary contributors to developing or aggravating chronic diseases such as heart disease, cancer, stroke, autoimmune diseases and high blood pressure.

During the time of stress, the *“wise brain”* (prefrontal cortex) helps to control both the old brain and emotional brain. The wise brain is only found in humans and it is responsible for making executive decisions such as reasoning, decision making and collective mindset.

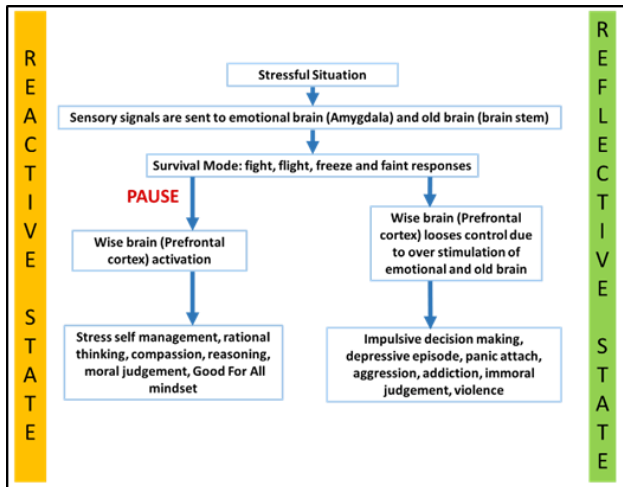
Need for a *“Pause”*

Every day we try to balance several facets of our life (work, personal, family, school etc.). It is difficult and nearly impossible to give our full attention to multitasking. Yet we continually aspire to do so. The common myth about multitasking is that it helps us handle tasks more efficiently. Research has shown that multitasking contributes to more stress in our daily lives.⁽⁷⁾

A brain imaging study conducted at Carnegie Mellon University showed that participants who multitasked the most had less brain density in the area of the brain responsible

for empathy and emotional control (anterior cingulate cortex).^(5, 12) In the same study, researchers observed improved brain activity when subjects were engaged in a focused single task.⁽¹²⁾ The state of multi-tasking not only consumes more resources (such as time, money, efforts and expertise) but also increases stress due to the excessive efforts needed by the brain to finish a task. It ends up causing frustration, irritation, disappointment and anger.^(5, 6)

Figure 2: Parts of the brain activated during stress



When one takes a momentary pause (such as focused breathing) during time of stress, the wise brain can be stimulated. Stimulation of the wise brain helps control the old brain and the emotional brain, resulting in more logical, moral and intentional reasoning.

Pause also helps in controlling stress hormones in the body, creating a reflective mindset rather than reactive. The “pause”

helps to rationalize a situation realistically rather than emotionally or irrationally.

“Pause”

The purpose of the pause is to reframe, refocus and reenergize our body, thoughts and actions. Pause is the easiest way to break the vicious cycle of multi-tasking. It is an effective way to differentiate between “perception” and “reality.” Pause creates the space between a perceived situation (born from preconceived notions and emotions) and an actual situation. This space creates more opportunities for rational responses.

There are several ways to create a “pause” in everyday life. Studies have shown that taking a break for 10 minutes after every 90 minutes of focused task(s) improves productivity and quality of the task accomplished.⁽⁸⁾ Adding a pause to your daily life is a personal choice and it can be tailored to address individual needs. Therefore, more intentional strategies should be created to implement a pause in a daily life.

Mindfulness: An Effective Way to “Pause”⁽³⁾

“Mindfulness is the awareness that arises through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment⁽¹⁾ (Dr. Jon Kabat- Zinn).

It is an observational state where one simply observes the body, thoughts and feelings as

events in the mind, without over-identifying or reacting to them automatically. This results in a detached state of mind, creating a “space” that enables one to respond to situations more reflectively as opposed to reactively.

Mindfulness involves the acceptance of our feelings and thoughts with kindness, love, and appreciation. It is an effective way to add a pause in our everyday life.⁽⁸⁾

What Mindfulness is Not ^(3, 5)

- *It is not a religious practice.*

Even with origins in religious traditions such as Buddhism, Hinduism, Taoism, and Stoicism, mindfulness is a secular practice. It does not dwell on any particular religious aspect. The practice is based on awareness of self through emotions, thoughts, bodily sensations and the surrounding environment. It is an act of cultivating compassion and gentleness towards self and others.

- *Mindfulness is not about “not thinking.”*

This is one of the biggest misconceptions about mindfulness practice. The purpose of the practice is to bring the thoughts, feelings and sensations in your body into focus and not to avoid them.

- *Mindfulness is not a silver bullet*

Mindfulness does effectively help reduce stress immediately. However, it is most effective when used long term rather than short term. Like following healthy habits

such as exercising, mindfulness is an everyday process.

It is not an instant cure for stress but an everyday awareness of internal and external stressors and how we respond to it. This approach not only helps manage stress but also creates an awareness about stressors and their impact on self, relationships and the environment.

- *Mindfulness is not about “doing” but “being.”*

“Doing” is mostly action-oriented and about conducting a task. “Being” is about taking time to observe and notice the current moment. While both of these aspects are essential, “being” provides time to truly assess, observe and connect with one’s self and surrounding. Hence, mindfulness is the state of “being.”

Mindfulness and Mental/Emotional Wellbeing ^(1, 9)

Researchers have shown that mindfulness creates a long-term effect on improving emotional resiliency and focus. Mindfulness can improve our wellbeing by:

- Reducing stress and depression,
- Reducing rumination (overthinking and obsessing about a situation or thought),
- Decreasing anxiety,
- Boosting working memory,
- Improving focus,
- Lessening emotional reactivity,
- Improving cognitive flexibility (ability to adapt), and

- Increasing self-acceptance and compassion.

Mindfulness and Physical Wellbeing

Overall wellbeing relies on both mental and physical health. Any imbalance in one of these areas can affect another in a very profound manner. Long-term stress can affect physical health and sense of wellbeing. Daily mindfulness practice has shown to improve even physical health by:

- Boosting immune system,
- Managing pain,
- Managing chronic disease,
- Maintaining weight,
- Implementing healthier habits, and
- Improving brain structure and function such as in the case of Alzheimer's disease.

How to Cultivate Mindfulness ^(1, 8)

Even though meditation is the formal way to cultivate mindfulness, it not the only way. It can be as simple as bringing a focused attention to any daily task, such as brushing teeth, reading a book, listening to music, driving etc. The way to implement mindfulness in everyday life is by:

- Paying close attention to breathing, especially when experiencing overwhelming emotion.
- Noticing the present moment or event using sight, smell, sounds, and touch. Truly experiencing the moment as if it is the first time you have ever experienced it.

- Identifying current thoughts and emotions and recognize that they are short-lived and will pass eventually.
- Turning attention to the body and physical sensations, e.g. noticing sweat on the skin or the movement of muscles while exercising.

Simple Ways to be Mindful

The practice of mindfulness can be achieved while doing any simple tasks. For example, brushing one's teeth and observing the sensations inside the mouth and the breath. Although mindfulness can be implemented during any activities, here are few suggestion that can help implement mindfulness in everyday life:

- Stretching
- Walking
- Yoga, tai chi
- Taking intentional breathing breaks
- Drinking coffee or tea
- Meditating
- Interacting with a child or a pet
- Active communication
- Engaging in art based activities such as Zentoodle, painting, embroidering, and coloring etc.
- Hiking
- Journaling

Nine Foundational Attitudes that Foster Mindfulness ⁽¹⁾

These nine attitudes are the foundation for the sustainable mindfulness practice in a daily life:

1. Non- judging

The human mind is constantly evaluating everything--people, self and the environment. Identifying "good" and "bad" is part of everyday life. Although it is essential to follow such evaluative processes, it is also overwhelming. A moment of non-judging allows time and space where one can be free from criticism and the pressures of making decisions. This non-judgmental attitude creates a gentle, forgiving and kind outlook towards self and others.

2. Patience

Patience is a form of wisdom that allows us to fuel unconditional acceptance. While practicing mindfulness, one accepts and understands that things unfold in time. It also helps to alleviate the constant pressure of establishing "control." Mindfulness creates a pause to truly experience what is currently happening, such as sounds, emotions or thoughts. In a way, it helps to observe the actual experiences that are not clouded by overwhelming emotions and perceptions.

3. Beginner's mind

Beginner's mind allows us to explore and experience everyday moments with freshness and open-mindedness. Simply paying attention to the daily activities such as eating, can help you truly engage in the whole experience. It helps to see the simplest things with greater appreciation.

4. Trust

Trust is about being trustworthy and trusting others. It is a recognition that we are not in control of every little life event. Trust is also

honoring and taking responsibility for self and wellbeing. We can trust self by listening to the subtle indications within and outside of ourselves. And when trust is within ourselves, we can shift our trust to others.

5. Non- striving

Mindfulness has no goals. It is the observational process that allows oneself to just "be." The easiest way to truly achieve this is by pulling oneself from striving and instead just focusing on seeing what is arising and accepting things as they are.

6. Acceptance

We often spend time in denial. We force situations to be what we would like them to be. This trait creates even more stress and prevents us from taking positive steps. Acceptance is an active process. It does not mean to compromise on values and principles and stop trying to break free of self-destructive behavior and habits. It also does not mean to give up on change and growth. Acceptance is a readiness to see things as they are. For example, we might neglect a headache while trying to meet a deadline at work. Rather than neglecting the headache, take a pause to understand and enquire what is going on within the body and take measures to treat it. One is more likely to know what to do when one is more attuned and accepting of the present moment.

7. Letting-go

"Letting-go is a way of letting things be and accepting things as they are," says Jon Kabat- Zinn. It is very common to fixate on

thoughts, relationships and tasks and to push away what we do not wish to experience.

Letting something go and just being can help free a fixative mindset. The breath is the easiest way to anchor this attitude. Directing attention (through breathing) to what “holding” feels like and realizing what it can feel like when we let go is a powerful tool that can help us practice this attitude of mindfulness.

8. Gratitude

Gratitude allows us to be aware and appreciative of the present moment. Often it is overlooked due to the busyness of the mind. When we are in a state of gratitude, we appreciate people and the smallest things surrounding us. For example, just the thought of having a body is such a profound yet often unnoticed thought. Be grateful to have a body that effortlessly does the simplest tasks without us even realizing it. Such thoughts are very powerful in creating the sense of fulfillment. At the same time, expressing gratitude to others improves interpersonal relationships.

9. Generosity ⁽¹¹⁾

Giving self to life and others is a powerful experience. Giving time and attention to someone other than self brings joy to others and even to oneself. Empathy and compassion are critical attributes of generosity.

Each of these attitudes is interconnected. Practicing one of them can lead to

strengthening other attitudes as well. For example, practicing non-judging can lead to improved acceptance, letting-go, generosity, and gratitude.

In spite of its simplicity, mindfulness can be a challenging practice. The major reason behind this peculiarity is that our brains are conditioned to constantly react in a state of autopilot. However, newer neuroscientific discoveries suggest that our brains can change at any age (neuroplasticity). This understanding and practice can help break the cycle of autopilot and form new, healthy and sound habits that provide overall wellbeing and a sense of fulfillment.

Recommended Mindfulness Resources for the Beginners

1. Resource materials from academic institutions

- University of Massachusetts Medical School-Center of Mindfulness, <http://www.umassmed.edu/cfm/>
- University of California Berkeley's Greater Good Center, <http://greatergood.berkeley.edu/>
- University of California Los Angeles Mindful Awareness Research Center, <http://marc.ucla.edu/>
- Duke Integrative Medicine, <https://www.dukeintegrativemedicine.org/programs-training/>
- University of California San Francisco-Osher Center for Integrative Medicine, <http://www.osher.ucsf.edu/>

2. Book recommendations

- Full Catastrophe Living Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness
By Jon Kabat-Zinn (2013)
- Wherever You Go, There You Are: Mindfulness Meditation in Everyday Life.
By Jon Kabat-Zinn (1994)
- 10% Happier: How I Tamed the Voice in My Head, Reduced Stress Without Losing My Edge, and Found Self-Help That Actually Works.
By Dan Harris (2014)
- The Mindful Nation.
By Tim Ryan (2012)
- The Mindful Brain: Reflection and Attunement in the Cultivation of Well-Being.
By Dan Siegle (2007)

3. Mindfulness phone apps (for iPhone and android phones)

- Insight timer
- Headspace
- Stop, Breathe, and Think
- Zenify

References:

- 1) Kabat-Zinn, J. (January 2005 edition), *Full Catastrophe Living: How to Cope with Stress, Pain and Illness using Mindfulness Meditation*, Delta Trade Publishers, pp- 7-23.
- 2) Free Image on Pixabay - Brain, Anatomy, Physiology of Human body. (n.d.). Retrieved from <https://pixabay.com/en/brain-anatomy-physiology-human-153550/>
- 3) Bishop S., Lau M., Hapiro S. (2004), *Mindfulness: A Proposed Operational Definition, Clinical Psychology: Science and Practice*. Retrieved from <http://www.jimhopper.com/pdfs/bishop2004.pdf>
- 4) *Depression* (n.d.). Retrieved from <http://www.nami.org/Learn-More/Mental-Health-Conditions/Depression>
- 5) *What Brain Imaging Reveals About the Nature of Multitasking*. (2014) Retrieved from - http://www.ccbi.cmu.edu/reprints/Just_Buchweitz_Chipman_Handbook-2014_multitasking-chapter_CCBI-preprint.pdf
- 6) Yeung, N., & Nystrom, L. (2006, January). *Between-Task Competition and Cognitive Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/16452666>
- 7) Jabr F., (2012, July). *Does Thinking Really Hard Burn More Calories?* Retrieved from <http://www.scientificamerican.com/article/thinking-hard-calories/>
- 8) Shwartz, T. (2010, May). *Managing the Productivity Paradox*. Retrieved from <https://hbr.org/ideacast/2010/05/managing-the-productivity-para.html>
- 9) *Mindfulness Definition*. (n.d.). Retrieved from <http://greatergood.berkeley.edu/topic/mindfulness/definition>

- 10) Davis, D. (2012, August). *What are the Benefits of Mindfulness?* Retrieved from <http://www.apa.org/monitor/2012/07-08/ce-corner.aspx>

- 11) Aknin, L. B., Dunn, E. W., & Norton, M. I. (2011). "Happiness Runs in a Circular Motion: Evidence for a Positive Feedback Loop between Prosocial Spending and Happiness," *Journal of Happiness Studies*, 13(2), 347-355. doi:10.1007/s10902-011-9267-5

- 12) Just, M. A., & Buchweitz, A. (2014). *What Brain Imaging Reveals About the Nature of Multitasking*. Retrieved from http://www.ccbi.cmu.edu/reprints/Just_Buchweitz_Chipman_Handbook-2014_multitasking-chapter_CCBI-preprint.pdf.013.4

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