

REHAB SUMMIT

502: Neuroplasticity & the Physiology of Stress: A Mindfulness Perspective

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Neuroplasticity and
The Physiology of Stress:
A Mindfulness Perspective

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Some of the Many Benefits of Mindfulness

Scientific research suggests that Mindfulness has the potential to....

- Reduce stress
- Decrease symptoms of anxiety and depression
- Reduce chronic physical pain
- Boost our body's immune system and help us fight disease
- Improve our attention and ability to concentrate
- Increase interpersonal skills and improve relationships
- Stimulate creativity

What Is Mindfulness?

"Paying attention to our present moment experience
with openness, curiosity, and a willingness to be with what is"
(UCLA)

"Mindfulness is simply settling into the present moment with a curious non judging awareness....
....allowing whatever is there to be there and not trying to make things be any particular way"
(Jon Kabat-Zinn)

Mindful vs. Mindless?

Operating on Auto Pilot

Where do our minds go when they're not in the present moment?

Why is it so hard to be happy with things just the way they are?

Happiness as "The Journey" rather than "A Destination"

The Physiology of Stress:
Humans Have Evolved For Survival, Not For Happiness

It's believed that the most common reason people see their doctors is because of stress related issues

Our minds have evolved for survival...not for happiness

Subconsciously we are always on the lookout for potential threats and harms

Our cerebral cortex has a great capacity for survival

Primitive times vs. the present

Our Inherent Negativity Bias:
Introducing the Amygdala

"Our minds evolved to be velcro for bad experiences and teflon for good experiences"
- neuroscientist Rick Hanson

As we evolved, the cerebral prefrontal cortex was forced to coexist with another, very primitive, survival mechanism called the amygdala

Amygdala evaluates our environmental circumstances to determine if something is a threat or not

Reacts much more rapidly and thoroughly to negative stimuli than to positive

Our Emergency Response System: Fight - Flight - or Freeze
(And Why It Never Gets A Rest)

In primitive times it was only real danger that activated our emergency response system....Fight - Flight - or Freeze

In modern times this emergency response system is activated by every one of life's minor annoyances, difficult situations,
or our own negative thoughts

When anger or anxiety is triggered, the amygdala drives prefrontal circuitry; when the disturbing emotion reaches its peak, an "amygdala hijack" paralyzes executive function

When physiologically we are no longer able to put a halt to our body's stress response - we never get the benefit of any recovery time

This sets up a continuous tension for most of us that manifests as feeling stressed

When Everyday Stress Turns Into Occupational Burnout

The pressure from prolonged, unrelenting stress can ultimately cause some individuals to suffer symptoms of occupational burnout

In one study of people with increased work demands who, for years, had consistently been working up to 70 hours a week, brain scans revealed enlarged amygdala and weak connections between areas in the PFC that can quiet the amygdala in a disturbing moment

(Golkar, A., et al., 2014)

Our Default Mode Network

One of the most interesting things revealed by brain scans is that, even when we are not engaged in any active mental task, there are regions of the brain that light up

Primary areas are the mPFC (midline of the prefrontal cortex) and the PCC (postcingulate cortex)

It seems that, when we aren't focusing our attention on a task, our minds tend to wander and the brain activity reflects this

And this mind wandering is very often focused on the self....mental activity referencing "I" or "me"

Neuroscientist Marcus Raichle named this phenomenon the "Default Mode Network"

How The Default Mode Network Works: The Pitfalls of Self Referential Thought

By framing every thought and event in terms of how it impacts us personally, the "default mode" makes each of us the center of the universe as we know it

Involves all the stories we tell ourselves....and how, over time, we've come to believe them as absolute truth

But when we are able to let the self-referencing go and pay full attention to what's at hand....without judging it in terms of good or bad or creating stories around it....we enter a "state of flow" which can make us feel more joyous

The prefrontal areas no longer need to make an effort to do the work of "disentangling" and there is a gradual lessening in the connectivity among the various nodes of the default circuitry
(Garroson, K., et al., 2013)

Experiential Activity:
"Gaining an Experience of Your Own Mind"

**Taking Back Control of our Attention
as a Means of Reducing Stress**

When we sit in meditation we can begin to see our thoughts for what they are....catalysts that influence our behaviors and drive our actions

Back in the 1970s science believed attention was involuntary, coming from the brain stem (a bottom up approach). Now we understand that attention can be directed and controlled from the cortical area (a top down approach)

Mindfulness research has shown that when we take control of our attention (for instance, with meditation) we activate the prefrontal circuitry to quiet the amygdala and reduce stress reactivity

And this is true in both novice and experienced meditators (although it is dose dependent and so is seen in a greater degree in those with a long term established meditation practice)
(Kral T.R.A., et al., 2018)

Some Research on Mindfulness and Stress Reduction

In one study, experienced meditators (average 9,000 lifetime hours) had a smaller rise in cortisol (the hormone used as a hallmark indicator of stress) than an age and gender matched comparison group when each did an 8 hour day of meditation and the next day underwent the Trier Social Stress Test (TSST)

TSST is one of the most reliable ways known to science to trigger the brain's stress circuits and its cascade of stress hormones

Simulated job interview followed by some complicated mental arithmetic

In addition to the decreased cortisol release, the meditators perceived the whole ordeal as being less stressful than the non meditators
(Rosenkranz, M.A., et al., 2016)

The Additional Components of Equanimity and Acceptance

A similar, but more recent, study also demonstrated faster cortisol recovery from the stress induced by the TSST among long term meditation practitioners when compared with age and sex matched novice meditators

But, additionally, the experienced meditators reported less feelings of shame and higher self esteem following exposure to the threat as well as higher scores on the emotional regulation strategy of Acceptance

The conclusion was that the ability to practice Equanimity and Acceptance created a connecting pathway which facilitated the reduced stress response due to the underlying positive effects of the meditation practice

(Gamaunova, L., et al., 2019)

Even Novices Demonstrate Stress Reduction From Meditation

A small group of patients with social anxiety underwent a standard 8 week MBSR program

fMRI before and after evaluated their reactions as stressors were presented (statements taken from their own tales of social meltdowns and their thoughts during them like "I am incompetent" or "I am embarrassed by my shyness")

Instruction beforehand: Either mindful awareness of breath or distraction by doing mental arithmetic

Only the mindfulness of breathing group demonstrated lowered activity in the amygdala as well as strengthening of the brain's attentional networks...along with a subjective report of less stress reactivity (Goldin P.R. and Gross J.J., 2010)

The same researchers later found similar beneficial results in the same population when MBSR was compared to aerobic exercise as a form of stress relief (Goldin et al., 2012)

2015 Study at UCLA Looked at the Effects of Mindfulness on Stress in Breast Cancer Survivors

Group of 39 younger breast cancer survivors who had been diagnosed with early stage breast cancer at or before age 50 and then underwent subsequent cancer treatment

Participants received 6 weeks of mindfulness training (MAPS) and then effects were evaluated with both pre and post questionnaires as well as blood testing

Results: Significant reductions in perceived stress, marginal reductions in symptoms of depression, and significant reduction in pro inflammatory gene expression and inflammatory signaling (Bower, J.E., et al., 2015)

Mindfulness and General Anxiety Disorder

Early research on individuals suffering from General Anxiety Disorder (GAD) demonstrated they, like other chronically stressed populations, have an exaggerated stress hormone response to the TSST when compared to healthy controls

(Gerra G., et al., 2000)

A recent study evaluated resilience to stress as introduced through the TSST on a group of persons suffering from general anxiety disorder (GAD) by comparing the impact of MBSR training with an attention control, Stress Management Education (SME)

The researchers evaluated both stress hormones (cortisol, ACTH) and inflammatory markers (TNF-alpha and interleukin-6) for a combined measure of resilience to stress

Individuals in the MBSR group had a greater drop in stress related hormones as well as pro inflammatory cytokines

for findings that were consistent with earlier work which had already demonstrated that mindfulness meditation enhanced biological resilience to laboratory stress
(Hoge, E.A., et al., 2018)

Mindfulness and Stress Reduction For Our Patients

A 2019 study examined the feasibility and effectiveness of a referral-based insurance-reimbursable mindfulness program integrated within primary care to treat patients with mild to moderate anxiety, depression, stress, and trauma related disorders

Training intervention entitled MTPC (Mindfulness Training for Primary Care)

81 participants. Groups led by either physicians or mental health clinicians

Self report questionnaires at the end of the 8 week program showed.....

Reduced anxiety, stress, and depression....

Improved mindfulness and self compassion....

Measurable behavioral change (patients created their own personal wellness plan)

Compared to a group which received only a 60 minute introduction to mindfulness and then a referral for outside community resources
(Gawande, R. et al., 2019)

How Much Meditation Is Enough? Functional MRI Demonstrates How the Benefits are Dose Dependent

Rapid recovery from stress has long been considered the hallmark of resilience

Since 1992, Richie Davidson of the University of Wisconsin, Madison has been performing brain scans on a full range of meditators, from novices to Buddhist monks

Davidson has found that resilience and recovery from stress is very dose specific when it comes to meditation practice....the more experienced the meditator, the more quickly the brain recovers from stress

**How Much Meditation is Enough?
Functional MRI Demonstrates How the Benefits are Dose Dependent**

His lab performed a 2018 study which used fMRI to compare experienced meditators (average of 9,000 hours of lifetime practice) to a group of novices who had only undergone an 8 week MBSR training

There was an enhanced connection between the PFC and the amygdala in the long term group that had them demonstrating less reactivity when shown disturbing pictures of people in situations of suffering and their amygdala recovered from distress more quickly

And yet, even with a minimum of mindfulness training, the resilience baseline was transformed and these changes persisted beyond the meditation state (traits vs. states)
(Kral T.R.A. et al., 2018)

**Rapid Recovery From Stress:
The Hallmark of Resilience**

Resilience - the ability not just to survive hard or difficult times, but to actually thrive during and after them

Previously it was believed that Resilience was influenced by your disposition or personality type

Research is now showing that Resilience is actually a set of skills that can be learned and cultivated

And meditation can help with that....

Research on Resilience

Research on the human capacity to successfully adapt to challenges wasn't really being studied prior to World War II

After the war there was a great number of traumatized and displaced people and many of them were children who were orphaned and injured, or sick

Psychologists caring for these people noticed a very interesting thing - some of them fared improbably well, even in spite of their circumstances

In 1955 Emmy E. Werner, a developmental psychologist and pioneer in resilience research, set up a team at UC Berkeley and began the most important longitudinal study in the field: a 40 year project following nearly 700 children in Kauai, Hawaii

Findings From the Kauai Study

Werner discovered that a third of the most vulnerable children adapted exceedingly well over time

She determined three factors that influenced a person's ability to thrive in the aftermath of adversity. These included...

1. A stable role model
2. A tight knit community
3. A person's strong belief in their own ability to solve problems

(Werner, E.E., 1993)

Improving Your Own Personal Resilience

A good way to gauge your own level of Resilience is to take a look at how you tend to react when things don't go your way

How we deal with small problems is a good indication of how we'll respond to life's really tough challenges

We all have the ability to improve our skills of coping with some basic life changes that are within our power to make

Here are some suggestions....

Improving Your Own Personal Resilience

1. Take cues from someone who is especially resilient (the stable role model)
2. Develop a strong social support network and don't be afraid to reach out when things go wrong (the tight knit community)

There are neurobiological elements to a good social support system that can help build resilience. Lab studies have shown that, when exposed to a stressor, a person's heart rate and blood pressure do not rise as much in a group as when they are in the room alone (Southwick, Steven and Charney, Dennis)

Resilience: The Science of Mastering Life's Greatest Challenges (2018)

3. Develop a core set of beliefs to guide daily decisions that nothing can shake
And recognize what makes you uniquely strong - And Embrace It (the power of believing in yourself and your ability to solve problems)

Improving Your Own Personal Resilience

4. Face Your Fears

A good way to start is by placing yourself in a situation that is simultaneously scary...but also safe. For instance, watching a scary movie at Halloween. This can improve our skill for Emotional Regulation (Southwick, Steven and Charney, Dennis. 2018)

5. Exercise regularly

Research has shown the ability of neurons that have been damaged by stress to regenerate from the chemical changes associated with exercise. And in one study, imaging showed that the hippocampus actually increased in size in a group of sedentary people in their 60s who started to walk an hour a day 5 days a week (Szalavitz, Maia. 2013)

6. Incorporate mindfulness and meditation practice into your life as a way to decrease stress and increase resilience

Parting Thoughts on Resilience

In a way...Resilience is simply riding the waves of life...gaining a physical, moral, and spiritual flexibility with all the inevitable ups and downs of being human. It is the ability to flow with whatever life brings your way. To bend...but never break....

Remember Bruce Lee....

"Be formless...shapeless

Like water

Water can flow or creep...or drip...or crash

Running water never grows stale

Be water my friend. Be water"

Cultivating the Skills of Self Awareness and Emotional Regulation

Do you control your emotions or do they control you?

Emotions are nothing more than energy in motion (like the weather)

Science shows that the actual physiologic response to an emotion passes through our body in just 90 seconds

Generally speaking, with emotions we often tend to either suppress them, or to express them to an unhealthy extreme

Mindfulness is the healthy middle ground

STOP Acronym

Think of those many small irritations we experience throughout the course of our day....someone cuts us off on the freeway....or takes the parking space we were headed for....or our space at the gas pump....

One common acronym that works well with the kind of emotions that surface in these situations is STOP....

- S - Stop (allow a pause)
Before you react with rote, conditioned behaviors
- T - Take a Breath
- O - Observe (What is happening inside me)
Not just what you're feeling in your physical body
...but any emotions that might be present
- P - Proceed (with more mindful awareness)
Responding rather than Reacting

STOP opens up a space between Stimulus and Response

Experiential Activity: Utilizing the Practice of STOP

Impact of Extended Mindfulness Meditation Retreat on Emotional Regulation

One study examined the power of extended mindfulness practice with regard to emotional regulation and impulse control

The longitudinal design studied the relationship between control of emotions and impulses as a function of decreased stress and anxiety in a group of individuals who meditated 6 hours a day for 3 months as participants in an extended silent meditation retreat

Cognitive and perceptual tests were given at the beginning, middle, and end of the retreat as well as five months later

Findings were that the participants progressively improved their ability to control impulses and avoid acting on whim, as well as reporting less stress and an increased sense of well being

And all of these positive changes still remained 5 months after the end of the retreat

(Saron, Clifford, 2013)

Using Mindfulness To Generate Positive Emotions

In addition to the calming effects of breath meditation, mindfulness meditation can also be used to cultivate open hearted, virtuous qualities like Loving Kindness, Compassion, Equanimity, and Appreciative Joy

Practice involves repeating phrases of well wishes (for self and others) silently to oneself

And different varieties of meditation yield different results....

A 2015 study in Leipzig Germany had novices practice daily for a few months each one of three different types of meditation: focus on breathing, generating the open hearted quality of Loving Kindness, and awareness of thoughts (monitoring them without getting swept away by them)

The breath meditation was indeed more calming and fostered greater relaxation while the Loving Kindness meditation was unique in that it generated a more positive mood (Lumma, Anna-Lena et al., 2015)

Our Innate Bias Toward Love and Kindness

Eastern spiritual tradition upholds that we come into the world with an innate bias toward altruistic intentions

Infra red eye tracking in studies with infants shows that a 6 month old baby prefers animation of helpful graphics rather than hindering graphics

(Hamlin, J.K., et al., 2007)

Meditation Increases Kindness Before It Decreases Stress

Research also shows that the benefits of meditating on open hearted qualities like Kindness or Compassion (whether it's for ourselves or others) manifest themselves in our actions and behaviors much more quickly than does any increased ability to cope with stress that comes through simply performing relaxation breathing meditation

This may be due to a "biological preparedness" because our brain is already primed in this direction (i.e. the idea of our own True Nature being a "good" nature) (Goleman, Daniel and Davidson, Richard. Pg 111. 2017)

So perhaps what Mindfulness is actually doing is re-connecting us with the basic nature of our own being!

**Mindfulness and Brain Remodeling:
The Science of Neuroplasticity**

Neuroplasticity is the idea that the brain can actually remodel itself with regard to both structure and function

First presented in a lecture given by neuroscientist Richie Davidson in 1992 which was looking at the theories on "nature vs. nurture". His conclusion was that we don't have to choose between the two because they're interconnected...and they interact with each other

Earlier research had already shown that environmental experience can cause actual changes in the brain....

Bruce McEwen (Rockefeller University) had observed the shrinking of dendrites in the hippocampus (a node crucial for memory) in the brains of dominated rodents

And Marion Diamond (UC Berkeley) found that when rats were placed in habitats that stimulate (toys, things to climb on, places to explore) the result was thicker dendritic branches connecting neurons as well as growth in specific brain areas, including the PFC (important in attention and self regulation)

**Neuroplasticity Challenged
the Prevailing Dogma of the Time**

It had always been believed that the human brain was fixed in form and function by around age 25....

That each of our brains are capped at a maximum number of neurons and we lose them in a slow and steady die-off over the course of our lives

For decades, this thinking had had profound ramifications....

It lowered expectations about the value of rehabilitation for adults who had suffered brain damage from a stroke....

Or the possibility of ever altering the clinical presentation of some forms of mental illness

**But Now the Stage Was Set for New
Research Which Would Embrace More Forward Thinking**

One early study of string musicians (violin, cello, guitar) demonstrated enlargement in the areas of the brain which manage the required finger work (Elbert T., et al., 1995)

And, from that time on, what the findings from neuroplasticity research began to suggest is that our experiences can reshape our brains...And that the changes which can result are not minor ones

And because meditation is essentially just another way of retraining our mind...a committed meditation practice actually has the potential to alter our brains in a multitude of positive ways...

Better emotional regulation

Improved attention and focus

Increased stress relief

A decrease in self referential thought

An increased ability to cultivate positive emotions like kindness and compassion

The Science of Epigenetics

Epigenetics....the relatively new science of studying the changes in gene expression and what things might influence this (in essence, what turns the genes on and what switches them off)

Multiple studies have observed how meditation seems to "down regulate" the genes responsible for the inflammatory response. The mechanism is not clear but the effects are measurable (Kaliman P. et al., 2014) (Rosenkranz, M., et al., 2013) (Rosenkranz, M., et al., 2016) (Cresswell, D., et al., 2016)

This could have far reaching effects since increased levels of cellular inflammation have been linked with heart disease, cancer, diabetes, arthritis, asthma, and Alzheimers (Goleman, Daniel and Davidson, Richard. Altered Traits. 2017)

Telomeres

Telomeres are the caps at the ends of DNA strands that reflect how long a cell will live (like the protective caps at the ends of shoelaces)

The longer the telomere....the longer the life span of that cell

Longer telomere length has been linked to higher levels of adaptive qualities like optimism and emotional intelligence (Schutte et al 2016) as well as the tendency toward the positive trait of conscientiousness (Edmonds et al 2015)

But as we age, telomeres wear and begin to shrink and the DNA does not replicate as effectively. Shorter telomere length has been associated with neuroticism (van Ockenburg et al 2014), pessimism and hostility (Lin et al 2012), worry, rumination, and negative mind wandering (Epel et al 2013), and linked with individuals suffering from major depressive disorder (Wolkowitz et al 2011)

The Power of Positive Lifestyle Changes

Telomeres tend to shorten more quickly in individuals who have a history of long term psychosocial adversity (Epel and Prather 2018) while they stabilize, and even have the potential to lengthen, in individuals who make positive lifestyle changes (Puterman et al 2018)

One such positive lifestyle change could be the introduction of a meditation practice and the literature suggests this can be a very powerful intervention for improving cellular longevity

One study looked at experienced meditators who were sitting a one month silent retreat and found an apparent increase in telomere length within the first 3 weeks comparable to the amount typically lost over an average 4 year period of normal aging (Conklin et al 2018)

Telomerase: The Enzyme That Slows Aging

Telomerase is the enzyme that slows the age related shortening of telomeres and is also actually capable of lengthening them

A meta analysis of 4 randomized controlled studies involving a total of 190 meditators found that practicing mindfulness was associated with increased telomerase activity (Schutte N.S. and Malouff J.M., 2014)

Another review of the literature on meditation and telomere biology concluded that telomere lengthening and telomerase activity seem to work by different kinetics and thus provide independent, yet complementary results. Generally speaking, telomerase activity appears to be affected more quickly than a change in telomere length (Conklin Q.A., et al., 2019)

Another, separate study also looked at the effects of intensive, extended retreat on experienced meditators and found a modest increase in telomerase activity in as little as one week (Epel E.S. et al., 2016)

The Power of Extended Silent Meditation Retreats

Meditation retreats occur in an environment that is safe and highly supportive. Real world demands and threats are removed and basic needs are taken care of. There is a sense of trust, community, and interconnectedness. Even individuals who are particularly vulnerable to negative emotional reactivity can begin to develop adaptive coping strategies when they are allowed to relax into a stable and supportive environment

This is an environment which is in contrast to our normally operant one in which the repeated activation of our acute stress response systems due to the "Negativity Bias" has deleterious effects on health and wellness

The retreat setting demonstrates an alternative model of stress adaptation, the generalized "unsafety theory of stress".

This model proposes that the only way we can inhibit our natural survival system which is already predisposed to threats (either physical or social) is by promoting perceptions of safety - (either within the context of the self, our social interactions with others, or our physical environment)

This alternative model shifts the emphasis from acute stressors that activate stress responses, to cultivating the safety signals necessary to relax a threat detection system which is ever at the ready (Broschott J. et al., 2018)

Mindfulness Research: Too Good To Be True?

Throughout the history of Mindfulness research, there have occasionally been some "iffy" findings that went viral...

- Meditation thickens the Pre Frontal Cortex (PFC) while shrinking the amygdala and
- Meditation slows aging

But we need to look at research studies with a very critical eye because, in truth, each of the studies that made those claims had problems with their methodology...

For example, the amygdala "shrinking" study used a method to estimate amygdala volume whose accuracy is questionable...

And, in the aging study, meditation was only one part of a complex treatment regimen that also included a special diet and intensive exercise

(Goleman, Daniel and Davidson, Richard, Pg 12. Altered Traits. 2017)

**“Brain Thickening” as an
Example of Limitations in Interpretation**

Sara Lazar was the first to report thickening in key parts of the brain a decade and a half ago

Her study compared 20 experienced meditation practitioners
(average about 3,000 hours of lifetime experience) with age and gender matched controls
(Lazar, Sara, et al., 2005)

In the decade that followed
the release of her findings, many more studies were published with similar results....

**“Brain Thickening” as an
Example of Limitations in Interpretation**

In 2014, a meta analysis of 21 of these clinical studies was published. The conclusion....
Some areas of the brain do seem to enlarge with meditation....

Insula - attunes us to our internal state and influences our emotional self awareness
Somatosensory areas - for touch and pain due to increased bodily awareness
Areas of the PFC - important in paying attention and which improve meta awareness
The orbitofrontal cortex - a highly evolved brain region associated with increasing positive mood
(and also enhancing self regulation abilities)
Regions of the cingulate cortex - also an important part of the circuitry for self regulation
(Kieran C.R.Fox, 2014)

But what's wrong with this?.....
The types of meditation that were studied varied significantly
All but a few used only a one time cross sectional image of the brain
And they often had sample sizes too small to draw definitive conclusions

Difficulties in Designing a Reliable Study

“Good” vs “Bad” Studies - What To Look For....

Relying on subjective questionnaires to measure effects
(rather than a reliable quantitative measurement like brain imaging scans)

Lack of an active control group

At the very least, not even a specific comparison intervention
(nutritional counseling, exercise, etc) and using only a “wait list”

No differentiation between how much meditation experience the practitioners have (i.e. novice vs. expert)

Other Confounding Factors

The Hawthorne Effect - An upward bump in the perceived result of an intervention simply because it is regarded as positive

Demand Characteristics - Factors that can be responsible for many of the positively perceived benefits in the early stages of meditation practice (especially with novice meditators)

Examples include the enthusiasm of the instructor teaching the technique, subject expectation, or social bonding in the group (Goleman, Daniel and Davidson, Richard. Altered Traits. 2017)

Discovering these study limitations requires examining things on a much deeper level (i.e. "Being Mindful" with regard to the studies on Mindfulness)

Taking It Back Home With You: 12 Easy Ways To Cut Stress During Your Workday

And whether you already have...or would be interested in cultivating a formal meditation practice... the truth is that every one of us has the capacity to practice informal Mindfulness in our daily life... simply by increasing our awareness and becoming more present in the moment as it is unfolding right in front of us

So here is a little take away from our time together as a guide toward becoming more mindful in your own everyday life... 12 easy ways that you can start decreasing the inevitable stress of life during your day....

12 Easy Ways To Cut Stress During Your Workday

Take 5-10 minutes in the morning to get grounded before you start your day. Gaze out the window, sit with a pet, listen to the sounds of nature, or take a quiet walk

Take a minute to quietly pay attention to your breathing while waiting for your car to warm up

Be aware of any body tension while driving - hands wrapped tightly around the steering wheel, shoulders raised, jaw clenched. Breathe gently into these areas and see if you can begin to allow them to soften

Turn off the radio and simply be present with the experience of driving...the feel of the road through the steering wheel, the change in your body position as your car turns a corner, the faces of the other drivers when stopped in traffic

12 Easy Ways To Cut Stress During Your Workday

Experiment sometimes with slowing down and driving in the right lane, keeping 5 miles or so below the speed limit

When you leave your car and walk across the parking lot to your office, notice the contact of your feet on the ground.... the sounds around you...feeling the warmth of the sun or coolness of the breeze on your skin

Use a specific sound during the day to signal you to pause and check in with yourself to see how you're doing....noticing what thoughts are in your mind, what emotions are in your heart, how your physical body is feeling. Your Mindfulness

bell might be the ringing of a phone, a plane flying overhead, or the chime of a clock at the top of the hour

Take the time to look into people's eyes as you speak to them. Think of one particular thing that you appreciate about them....their smile, their sense of humor, their kindness

12 Easy Ways To Cut Stress During Your Workday

Choose to eat 1 or 2 lunches per week in silence, savoring all the nuances of the food

Notice the transitions in your life....moving from one room in your house to another....from the inside to the outdoors....the exchange of one task for another

Resist the temptation to frequently check your phone for messages or e-mails. Consider designating only certain specific times a day when you will do this

At the end of the day, make a mental or written list of 3 or 4 things that you have to be grateful for....the kindness of a friend, something new that you learned, something you accomplished that made you feel proud

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