

Integrating Mindfulness Training in K-12 Education: Fostering the Resilience of Teachers and Students



Beth Mulligan, PA-C

An Overview

Defining Mindfulness Training

History and origins in medicine

Applications and studies in education

What is Mindfulness?

- *The intentional training of moment to moment non-judgmental focused attention.
- * Over the last 30 years it has spread from it's initial applications in western medicine to many other fields including education.
- *Research shows that Mindfulness Training increases teacher well being, self-efficacy ability to manage classroom behavior, and maintain supportive relationships with students.



THE EDUCATION OF ATTENTION
WOULD BE AN EDUCATION
PAR EXCELLENCE.

- WILLIAM JAMES

It's helpful to think of mindful practices as an attention training for the mind, the way you might train a muscle group, or practice playing a musical instrument. This has been shown to make measurable changes through studies on neuroplasticity.



Mindful eating, walking, listening, living...



Practicing Mindfulness is like opening a door to the present moment.



Annie Esentepe

Benefits of Mindfulness

Better focus and concentration

Increased calm

Decreased stress & anxiety

Enhanced health

Improved impulse control

Skillful ways to respond to difficult emotions

Increased self-awareness

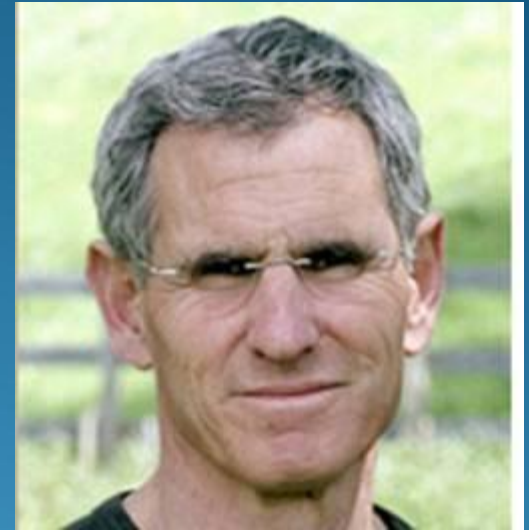
Increased empathy and understanding of others

Meditation is the formal practice of training the mind to be more focused in the present moment.



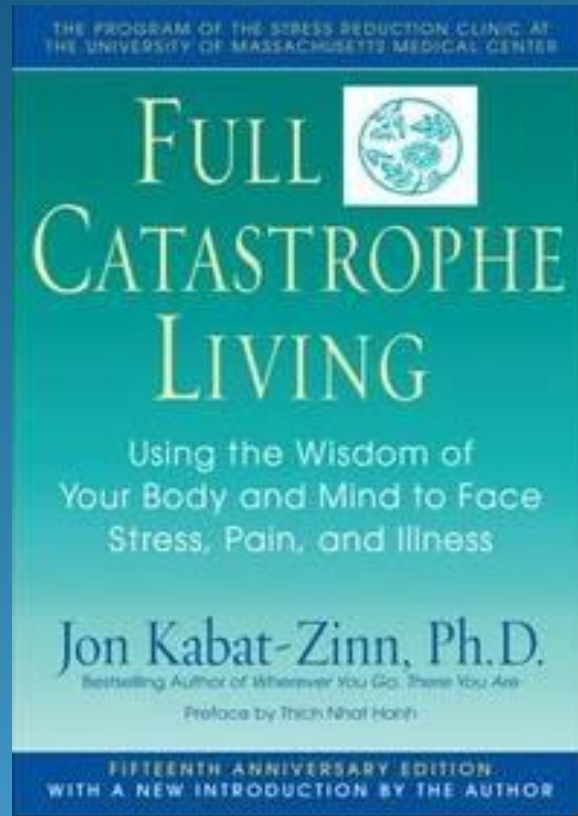
It is about training the attention.

Mindfulness Based Stress Reduction MBSR - Developed in 1979 UMass Medical Center by Jon Kabat-Zinn, Ph.D.

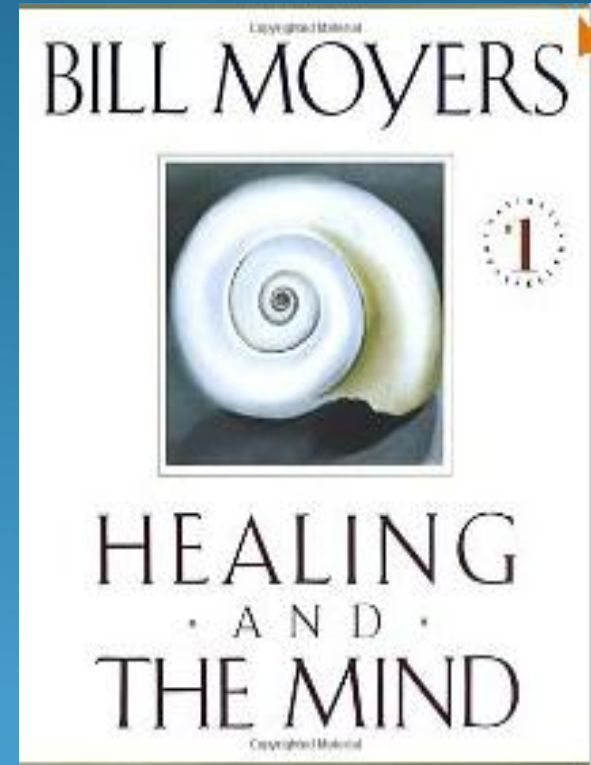


Healing and the Mind, 1993

PBS series by Bill Moyers



Full Catastrophe Living, 1990 Jon
Kabat-Zinn, PhD



The 8-Week MBSR Program



8 weeks

Two hours per week

Formal Practices

Body Scan

Yoga based movement

Sitting Meditation

Supportive Group Setting

Informal Practices

Homework

One all-day (6 hour)

retreat- in week 6

Goal of the MBSR Program

Provide new skills for self-regulation of stress and symptoms, in such areas as

Chronic pain

Headaches

High Blood Pressure

Sleep Disorders, Anxiety,
Depression and G.I. symptoms

Work and Relationships

Improve quality of life



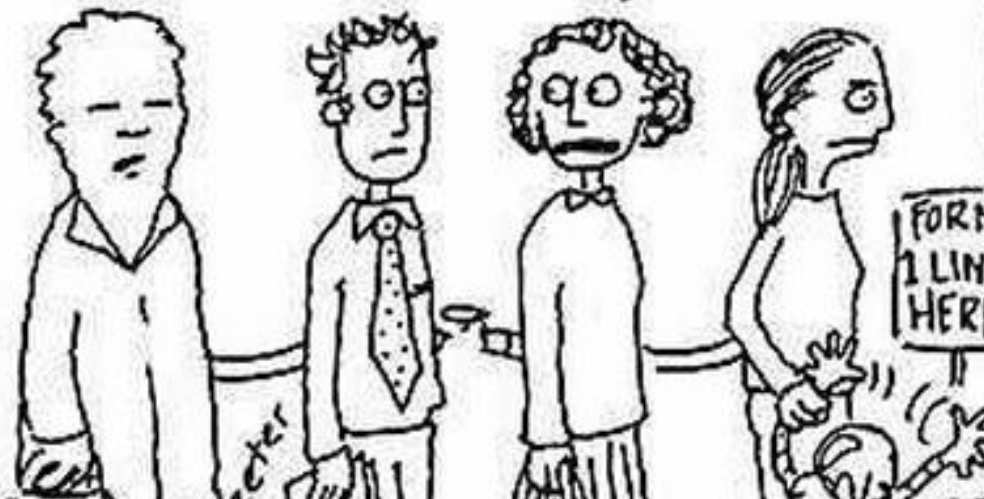
Who's Using Mindfulness?



PubMed Article Results for *Mindfulness* Keyword Search



I want to learn to
live in the moment...
just not this moment.
Some other moment.
Like a moment on
the beach.



JUNE 6, 1983

\$1.75

TIME

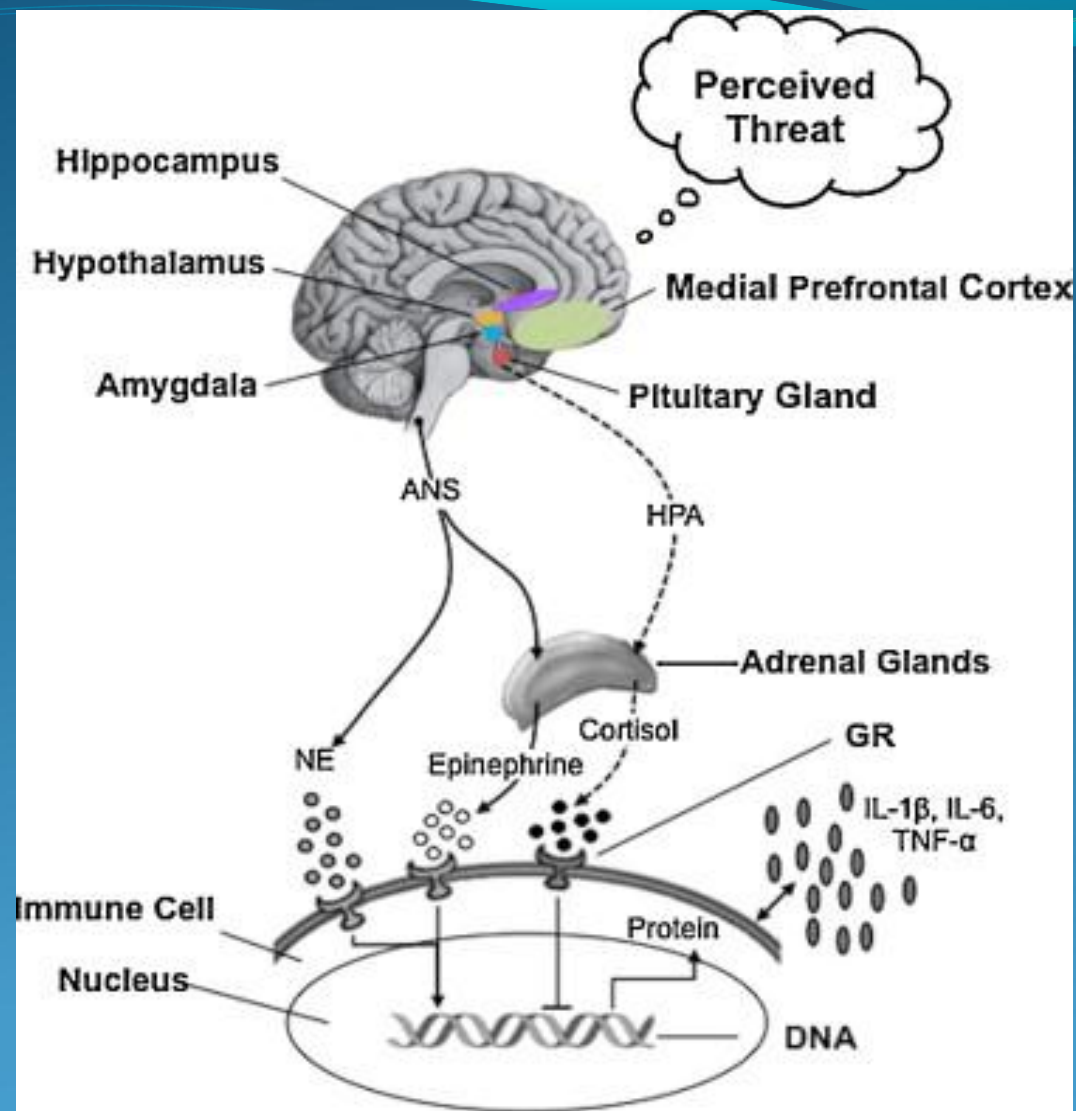
STRESS!

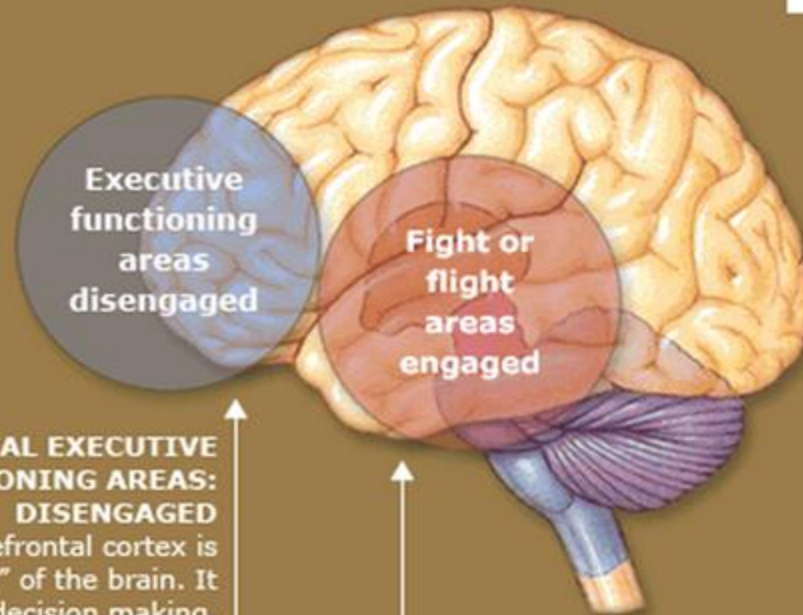
Seeking Cures for Modern Anxieties

More Turmoil
Over Central
America



100-100000





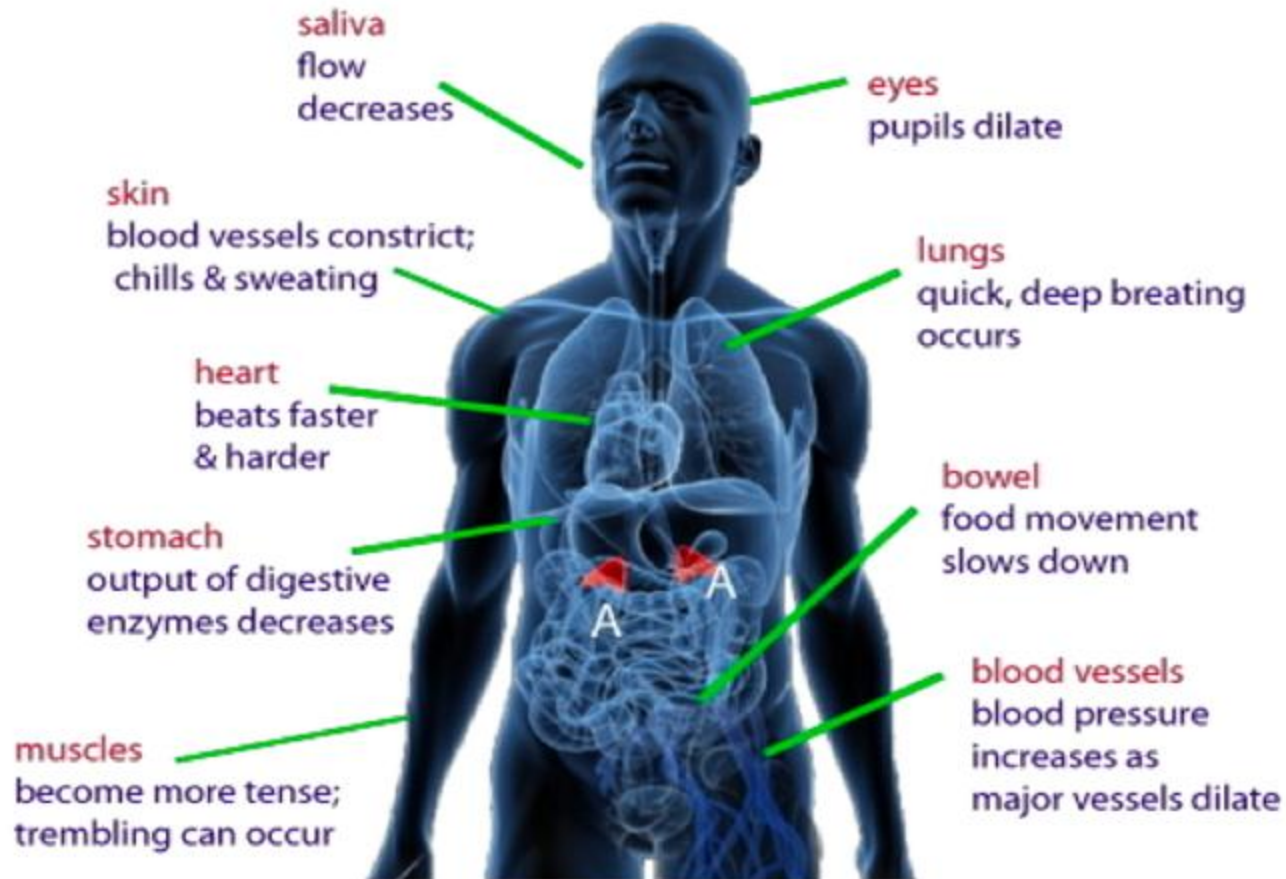
**FRONTAL EXECUTIVE
FUNCTIONING AREAS:
DISENGAGED**

The prefrontal cortex is the "CEO" of the brain. It regulates decision making, judgment, planning, moral reasoning, and sense of self. Stressful experiences (academic pressure, sleep deprivation, substance abuse, etc.) disengage the frontal lobes. Over time, this can lead to impulsive, short-sighted, even violent behavior; increased anxiety; depression; alcohol and drug abuse; learning disorders; and increased stress-related diseases.

**SUBCORTICAL FIGHT
OR FLIGHT AREAS:
ENGAGED**

The subcortical arousal system—thalamus, hippocampus, brainstem, and hypothalamus—mobilizes the body for action, increasing heart rate, respiratory rate, and muscle tone. The nature of this system is to bypass the frontal executive functioning and trigger the fight or flight mode.

Body changes during stress



External and Internal Stressors

External Stressors

- Financial Issues
- Health
- Family Problems
- Deadlines

Internal Stressors

Thoughts and beliefs

Emotions

Worry





Why Zebras Don't Get Ulcers





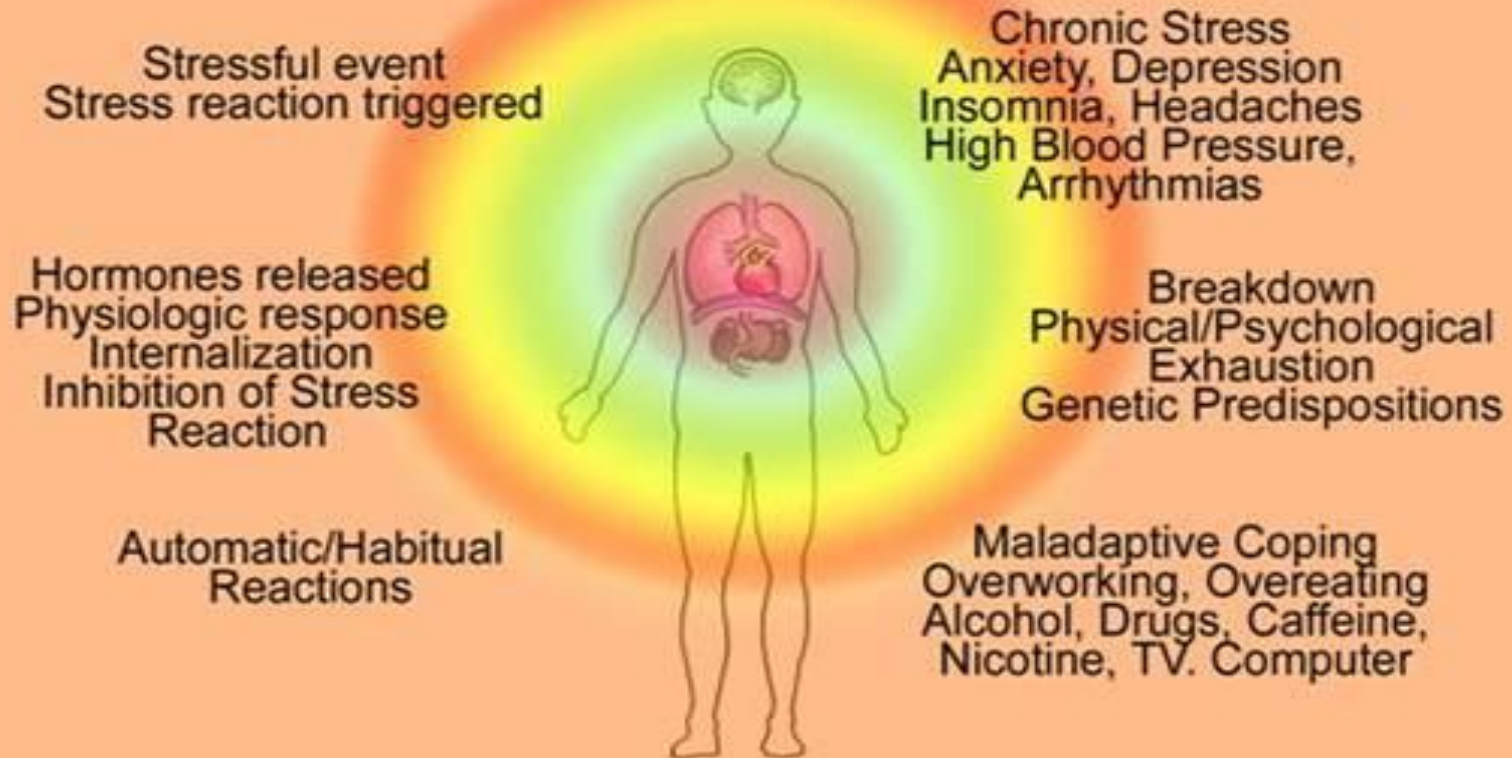
The Fight or Flight response is mean for short term use only!

Modern Day Stressors have no beginning middle and end...



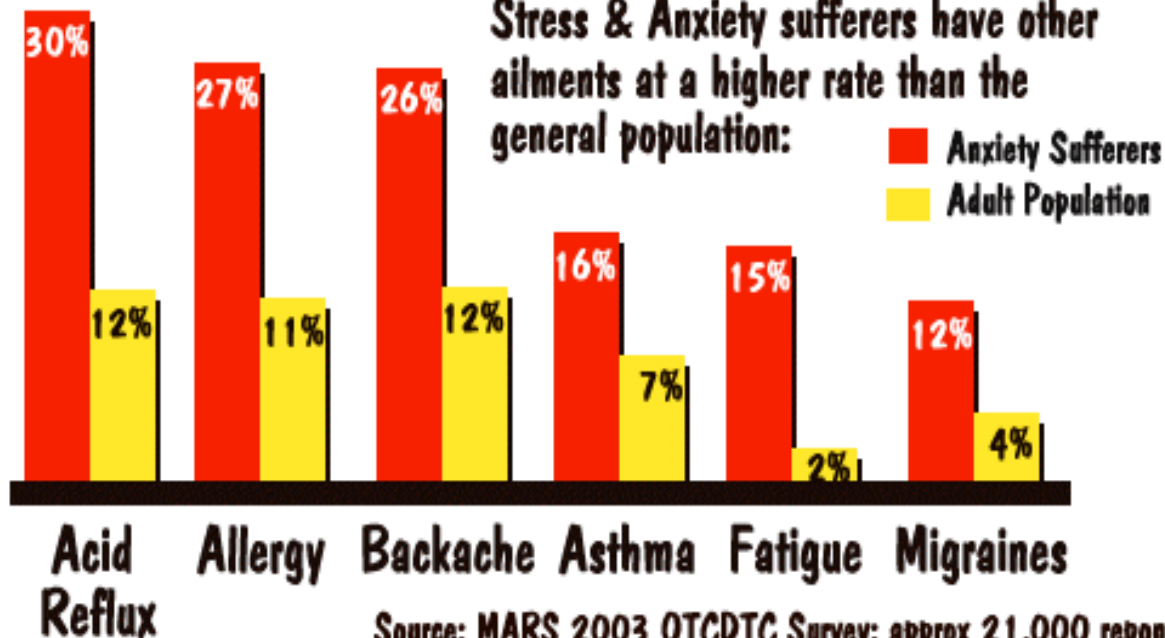
How Stress Turns to Illness

Stress Reaction Cycle



Impact of Stress and Anxiety

Stress & Anxiety sufferers have other ailments at a higher rate than the general population:



Source: MARS 2003 OTCDTG Survey: approx 21,000 responses

The Long term effects of chronic stress (and cortisol exposure):

Impaired immune response

Changes in body composition (more fat less muscle)

Mental health problems; increased risk of depression,
anxiety, shifting moods, frustration

Memory and learning impairment

Sleep impairment

Increased risk of heart attack

Reproductive dysfunctions

Gastrointestinal dysfunctions

University Zurich Study on Stress and Memory

Healthy adults were asked to memorize 60 unrelated nouns

Participants were then tested immediately and 1 day later.

Participants were given cortisol tablets or placebo.

Cortisol (like the stress hormone we produce ourselves when stressed) was shown to impair memory.

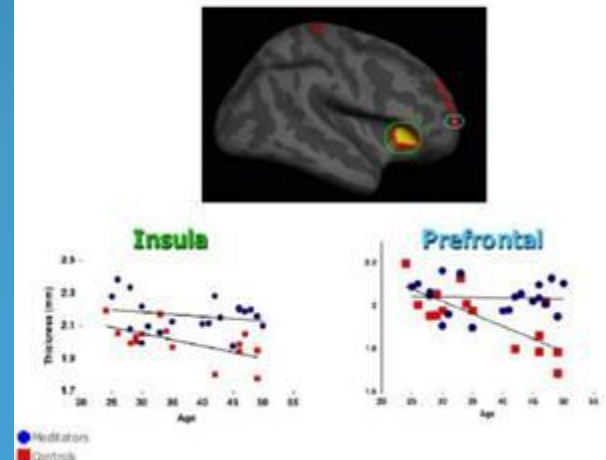
Harvard Study Published in Neuro Report, 2005 Lazar Et al: Meditation Experience Associated with Increased Cortical Thickness

MRI's showed that regular practice of meditation is associated with increased thickness in the gray matter-the cortex.

The cortex is the part of the brain that thins as we age and is also responsible for cognitive reasoning and problem solving. Meditation appears to slow this process.



Cortical areas thicker in meditators



Science News

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Mindfulness Meditation Training Changes Brain Structure in Eight Weeks

ScienceDaily (Jan. 21, 2011) — Participating in an 8-week mindfulness meditation program appears to make measurable changes in brain regions associated with memory, sense of self, empathy and stress. In a study that will appear in the January 30 issue of *Psychiatry Research: Neuroimaging*, a team led by Massachusetts General Hospital (MGH) researchers report the results of their study, the first to document meditation-produced changes over time in the brain's grey matter.

“Although the practice of meditation



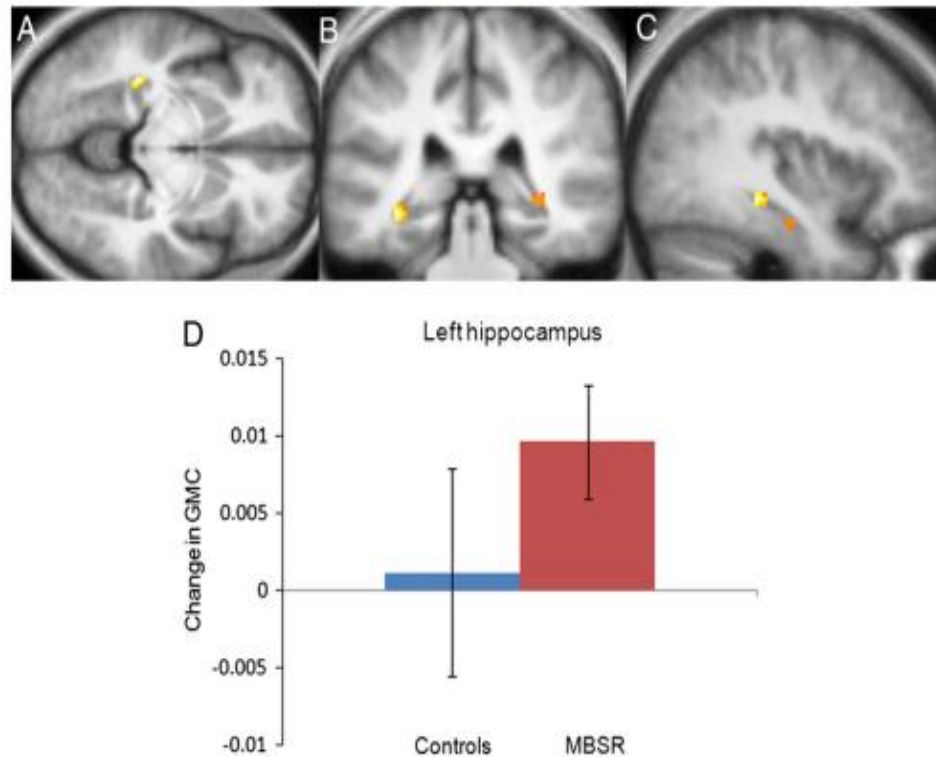


Fig. 1. Region of interest analysis identifies gray matter concentration increases in the left hippocampus (MNI coordinates $x = -36$ (C), $y = -34$ (B), $z = -8$ (A)) in the MBSR group. Voxels (thresholded at $P = 0.01$ and masked for the regions of interest) are overlaid over the group-averaged brain. D: Change in gray matter concentration (GMC) within the cluster in the left hippocampus from the Pre to the Post time-point in the MBSR and the control group; error bars show 95% confidence interval.

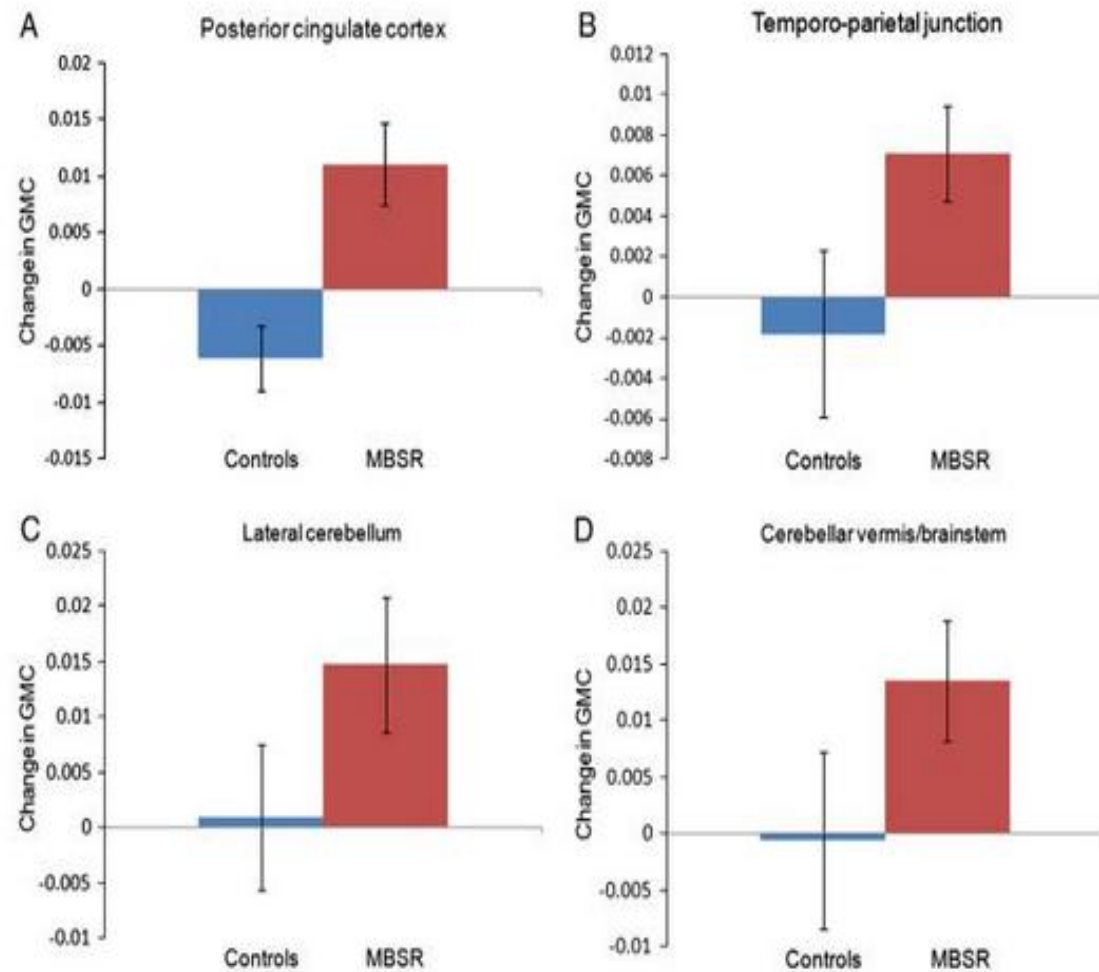


Fig. 3. Change in gray matter concentration (GMC) within the clusters in the posterior cingulate cortex (A), the temporo-parietal junction (B), the lateral cerebellum (C) and the cerebellar vermis/brainstem (D) in the MBSR and control group. Error bars show 95% confidence interval.

Benefits of Mindfulness in the Immune System

**Alterations in brain and immune function
produced by mindfulness meditation.**

Davidson RJ, Kabat-Zinn J, et al. (2003).
Psychosomatic Medicine 65:564-570

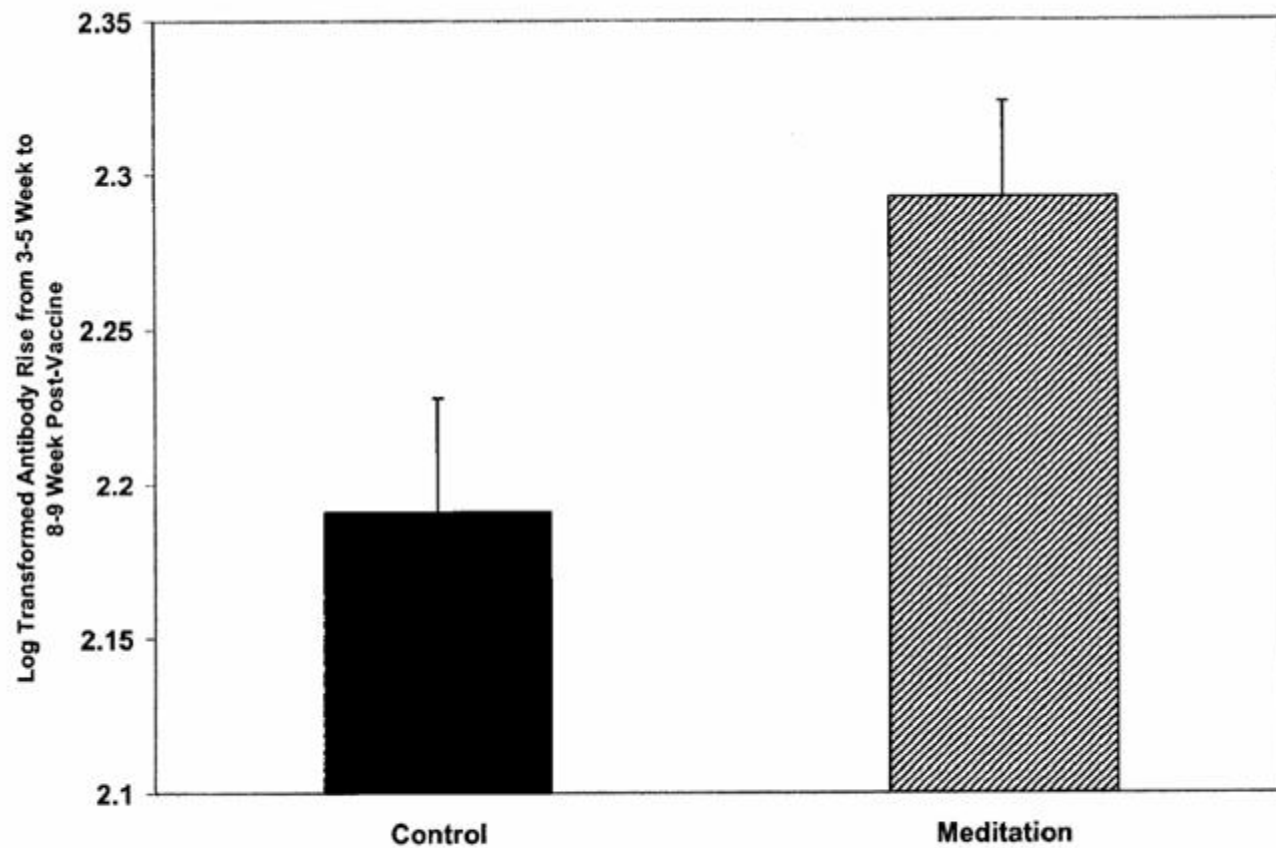


Fig. 5. Means \pm SE antibody rise from the 3- to 5-week to the 8- to 9-week blood draw in the Meditation and Control groups. The ordinate displays the difference in the log-transformed antibody rise between the 3- to 5- and the 8- to 9-week blood draws derived from the hemagglutination inhibition assay.

Conclusions

25 were tested in the meditation group. The wait-list control group (N = 16) was tested at the same points in time as the meditators.

At the end of the 8-week period, subjects in both groups were vaccinated with influenza vaccine.

RESULTS: Significant increases in antibody titers to influenza vaccine among subjects in the meditation compared with those in the wait-list control group.

CONCLUSIONS: Findings demonstrate that a short program in mindfulness meditation produces demonstrable effects on brain and immune function.

Summary of Research Findings

Clinical Research

Consistent & reliable benefits in a range of medical & psychological illnesses

Improved measures of health & well-being in healthy individuals

Changes maintained for up to four years
(length of study) Kabat-Zinn, 1987

Basic Science Research

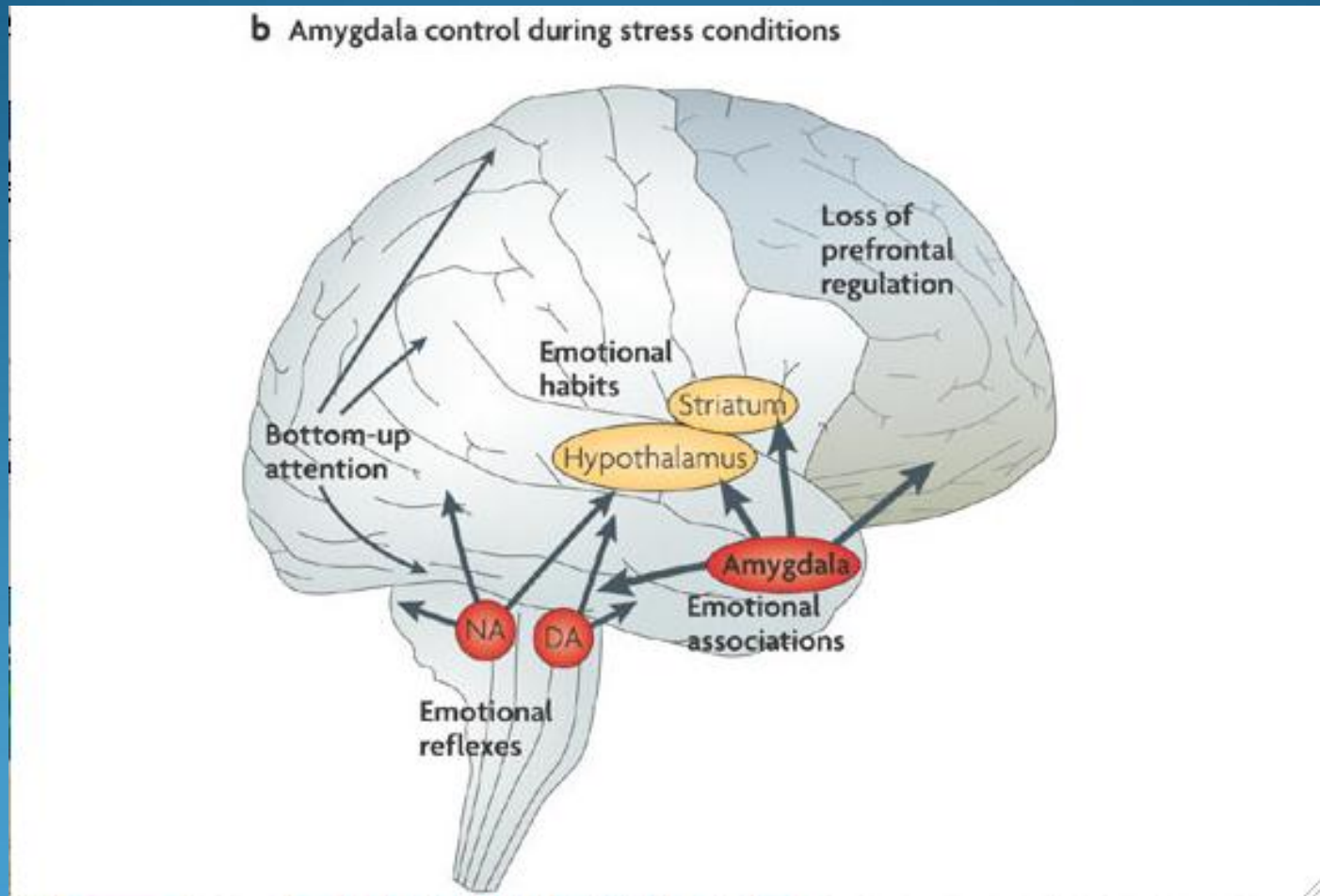
Strengthening of immune system

Positive changes in brain structure

Improvements in stress bio-markers



The stressed brain: Bottom-up attention, reactive and non-selective



Emotions make us pay attention right now - this is urgent - and gives us an immediate action plan without having to think twice.

The emotional component evolved very early:
Do I eat it, or does it eat me?

The emotional response can take over the rest of the brain in a millisecond if threatened.

Self-control is crucial ...when facing someone who is in the throes of an amygdala hijack so as to avoid a complementary hijacking - whether in work situations, or in private life.

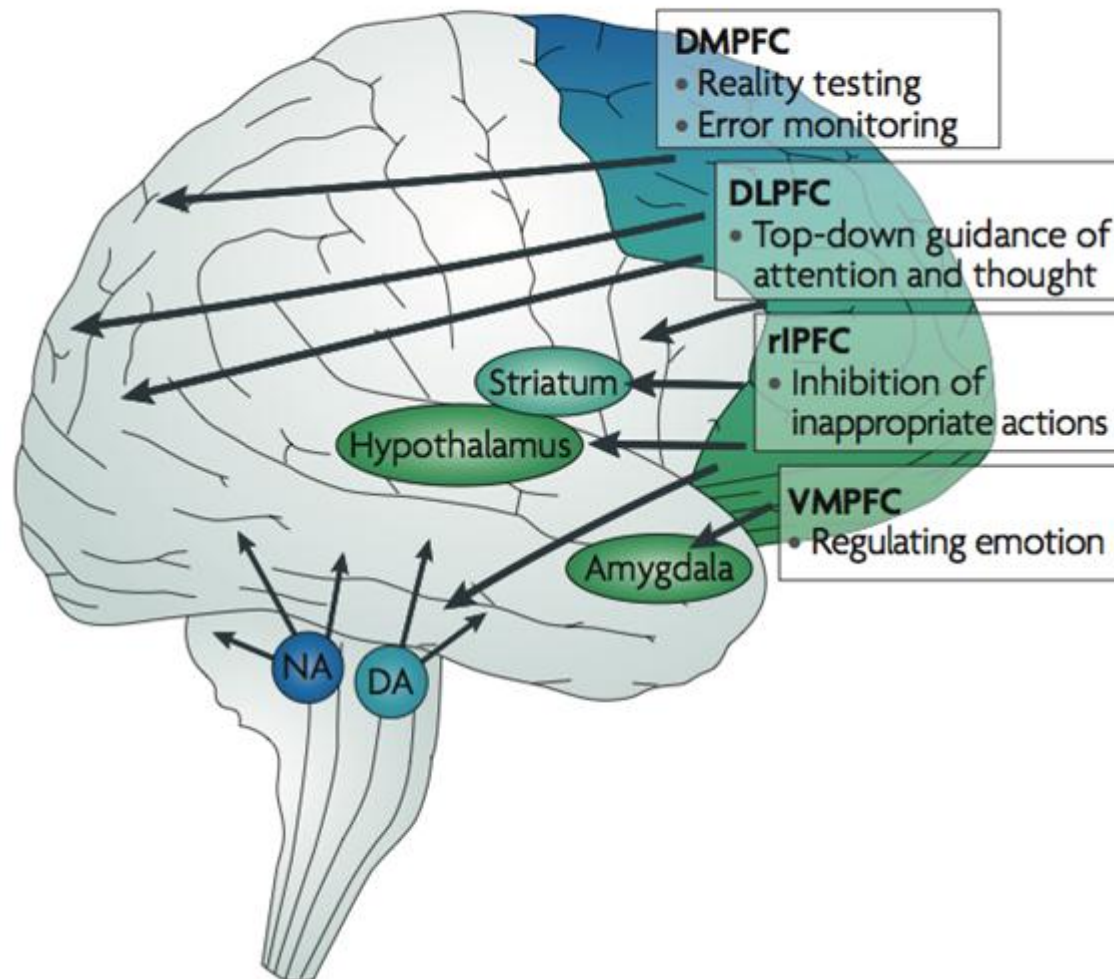
-Daniel Goleman, author of "Emotional Intelligence"



"OK, OK, you've made your point.
I'll admit that sometimes when I feel
threatened, I snap."

The Mindful Brain: Top-down attention, responsive & discerning

a Prefrontal regulation during alert, non-stress conditions



You can use your mind
To change your brain
To change your mind for the better

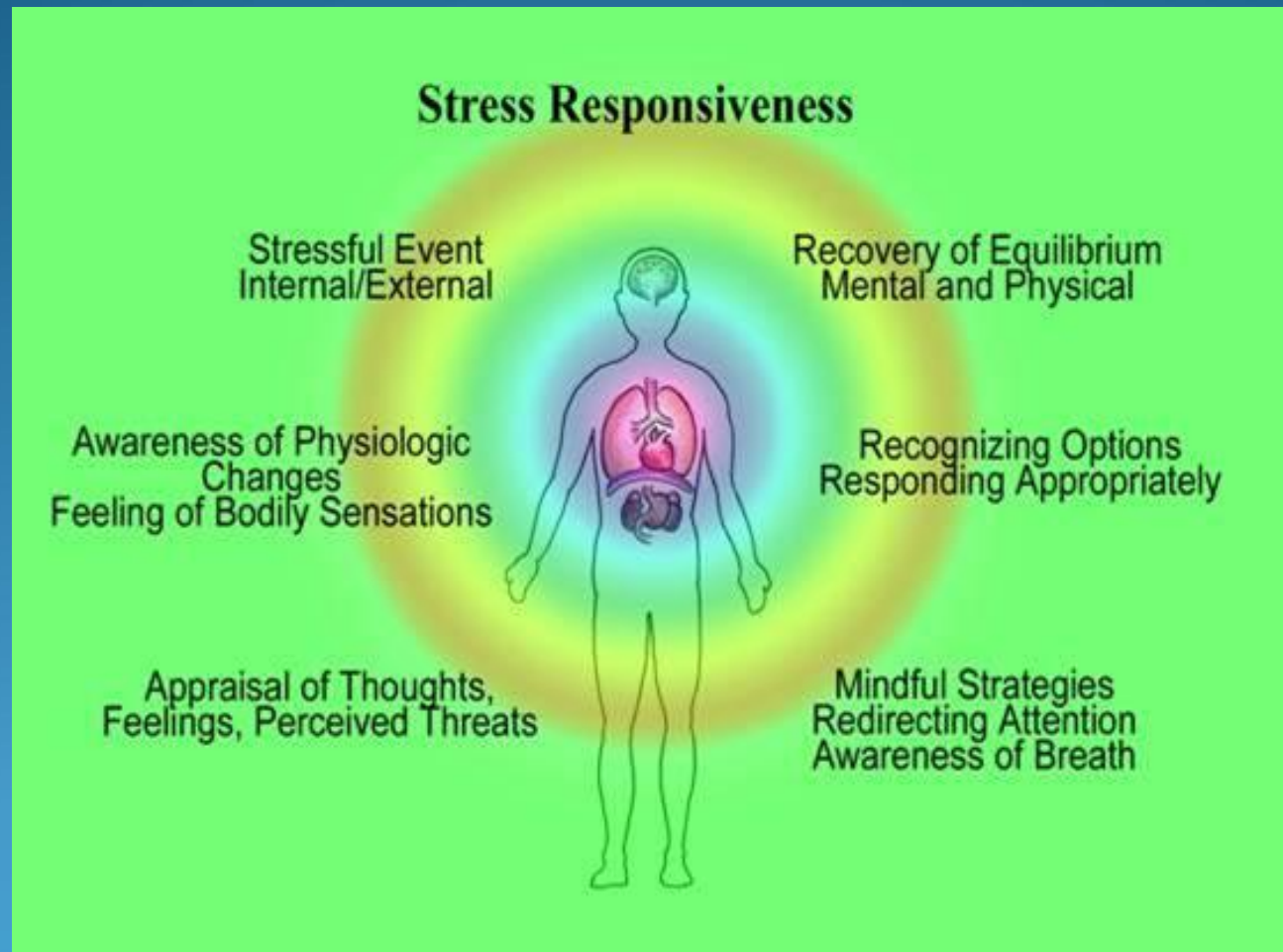
This is Self-Directed Neuroplasticity

Mindfulness Benefits in the Nervous System

Meditation produces measurable growth in the brain in
areas associated with:

concentration, sense of self,
positive emotions, empathy,
emotion regulation,
learning and memory

Breaking the Cycle



Pause
Stretch
Breathe



Mindfulness in Education

Schools and organizations bringing contemplative practices to youth are spreading around the world.

The following slides will exhibit some of the leaders in this new field.

Mindful Schools

Mission- Mindful Schools teaches children in public and private elementary schools how to be more mindful of their thoughts and actions. The program brings dramatic improvements in concentration, attention, conflict resolution, and empathy among students, building a calm climate in the classroom. 30,000 students..

Age Group- Elementary Schools

Delivery- Lessons last 15 minutes twice a week for several months. Mindful schools also conducts teacher training programs and workshops.

Location- San Francisco Bay
www.mindfulschools.org

Area



The Hawn Foundation

Mission- In collaboration with neuroscientists, behavioral psychologists, educators, and leading researchers in the field of social and emotional learning, has developed MindUP™, a comprehensive classroom-based program for children in grades K-7.

Delivery- The fifteen lesson MindUP™ curriculum uniquely incorporates the brain science associated with each lesson concept so that children also learn how their thoughts and actions affect their brain and how their brain affects their thoughts and actions.

Age Group- In K-7 Schools

Location- MindUP™ is currently in use in schools in the United States and Canada.

<http://www.thehawnfoundation.org/>



Mindfulness Without Borders

Vision- The programs serve as a catalyst for personal transformation by offering accessible and practical life skills that empower individuals to be the change they want to realize in their lives and communities.

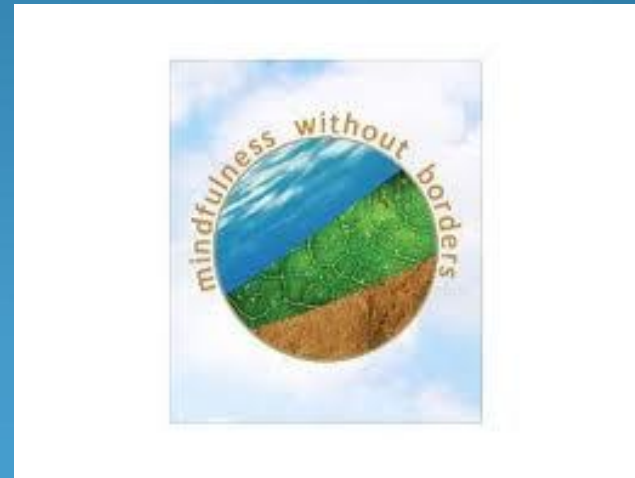


Age Group- Highschool age students.

Delivery-The Mindfulness Ambassador Council contains 16 theme-based lessons, with strategies to promote self-awareness, strengthen critical thinking skills, improve focus, effectively manage emotions, and reduce stress.

Location- MWB brings these teaching around the world, in Africa, the Middle East, the US and Canada.

www.mindfulnesswithoutborders.com



Mind Body Awareness Project



The MBA Project is dedicated to supporting incarcerated and underprivileged youth by giving them the resources they need to gain impulse control and create healthier lifestyles for themselves and their communities.

Age Group- Youth up to eighteen years of age.

Delivery- MBA offers classes in Probation settings, including youth prisons, juvenile halls, and detention camps. In these settings we work with Probation staff, Juvenile judges, and Mental Health staff to integrate our programming into the institutional culture, and to drive institutional change.

Location- Many facilities throughout the California Bay Area

<http://www.mbaproject.org/>

Outcomes for kids



Self-awareness (recognizing one's capacities, strengths, emotions, and values)

Self-management (managing emotions and behaviors, persevering in overcoming obstacles)

Social awareness (showing understanding and empathy for others)

Relationship skills (forming positive relationships, teamwork, conflict resolution)

Responsible decision-making (making ethical, constructive choices about personal and social behavior)

Mindful Schools

This information is based on recent evaluations of 702 Students:

- 93% of students say learning mindfulness has helped them in their life in some way:
 - 59% say it helps them focus better in the classroom
 - 61% say it helps them calm down when they are upset.
 - 52% say it helps them make decisions.
- Teachers say they have seen 78% of their students benefit from mindfulness.
- 96% of teachers say they have benefited personally.
- 94% of teachers say they will continue using mindfulness in their classes.

Mind Body Awareness Project

SUMMARIZED RESULTS, 2 year pilot study: January 2005- June 2007

QUANTITATIVE:

- perceived stress decreased: 17.7% – 28%
- anger/provocation decreased: 10.5%
- conflict resolution ability increased: 25% – 29.8%
- emotion regulation ability increased: 13% – 15%
- overall mindfulness increased: 10.5%

QUALITATIVE:

Percentage of youth who say they-

- feel physically better after coming to class: 95%
- feel less stressed after coming to class: 93%
- feel better about themselves after coming to class: 85%
- noticed less conflict with others: 64%
- reported sleeping better: 78%
- able to use what they'd learned to deal better with being in the hall: 82%
- are better able to 'cool off' when they get angry or upset: 78%
- spend some time each week doing breathing meditation or stretching: 66%
- plan to use the skills they've learned in class once they leave the hall: 89%

Other Mindfulness Based Curricula for Students:

The Inner Resilience Program

Learning to Breathe

Stressed Teens (Great app: Take a Chill)

Mindfulness in Schools also known as I.b

Inner Kids Program

Inner Resilience Program

Still Quiet Place

Wellness Works in Schools

Stress for Teachers

Heavy workloads

Time Constraints

Relative isolation from colleagues

Emphasis on Academic Achievement and Testing

Low Decision-making power

Parent Expectations

Lack of Support

High self-expectations

Mindfulness Training for Teachers

Mindfulness-Based Wellness Education (MBWE)

Cultivating Awareness and Resilience in Education
(C.A.R.E.)

Stress Management and Relaxation Techniques
(S.M.A.R.T.)



Note to Self:
Pay Attention

In Summary:

All 3 programs are experientially based on teachers learning mindfulness in personal and professional lives ,and showed:

Increased Mindfulness and Self-Efficacy compared with control group

Improved physical health

Highly satisfied with the training

Better able to manage classrooms

Felt it should be made available to all teachers

Positively influenced interactions with students and co-workers,

Decreased occupational Stress

Increased work motivation from pre to post intervention compared to occupational control group

Increased ability to listen more deeply, developing emotional awareness and compassion in the classroom

Stress Hardiness: Dr. Suzanne Kobasa

Control: I can influence my situation, I can make things happen

Commitment: I feel engaged in what I am doing, I am connected to my values

Challenge: I see change as a natural part of life in which I can choose to grow and develop new skills



Pause
Stretch
Breathe



© Stéphanie Robin/Kelley Ryden

What Participants Report

A direct, moment-to-moment
sense of connection

An understanding of thoughts and feelings
through self-observation

A sense of belonging and community

Peace of mind

Mindfulness also “works” by helping
the individual develop:

Resilience

Self-Efficacy

Sense of Coherence

-Jon Kabat-Zinn, 1989

MBSR is offered worldwide



Between stimulus and response
there is a space.

In that space is our power to
choose our response.

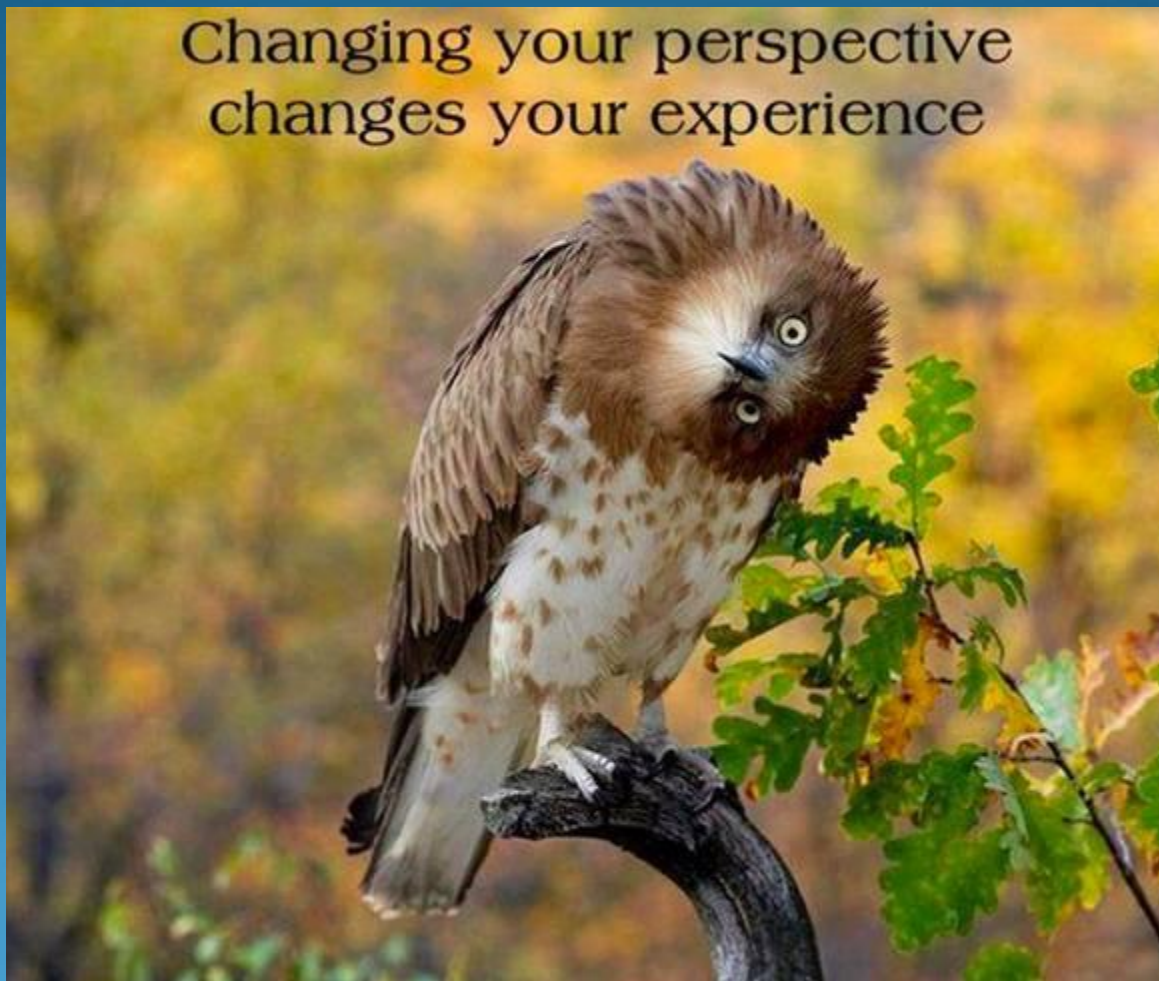
In our response lies our growth
and our freedom.

-Viktor E. Frankl

Mechanisms of Mindfulness

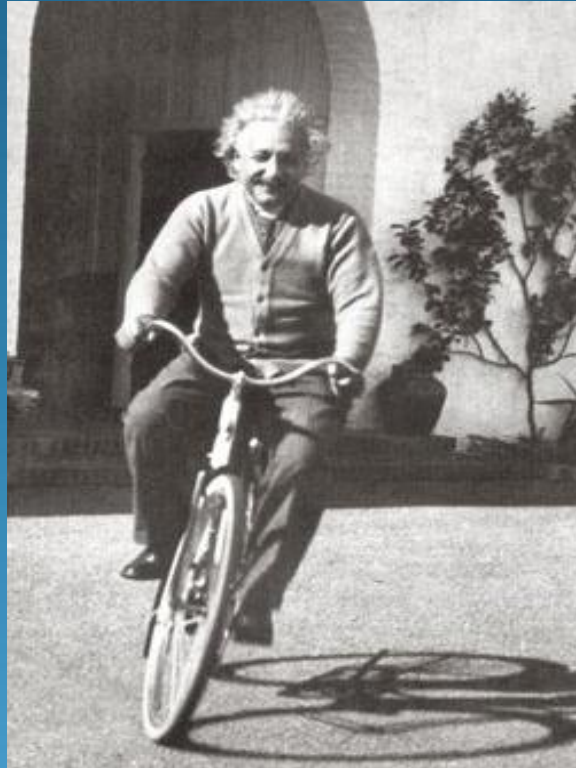
1. Attention regulation
2. Body awareness
3. Emotion regulation:
 - A. reappraisal
 - B. exposure, extinction, and reconsolidation
4. Change in perspective on the self

Changing your perspective
changes your experience



“Life is like riding a bicycle.

To keep your balance, you must keep moving.”



**Mindfulness is like riding a bicycle:
keeping your balance means paying attention,
in the moment, still moving.**

The bicycle is optional.



Simple things we can do

Meditation Classes or CD's MBSR at Susan Samueli Center for Integrative Medicine (starts July 9th)

Yoga or Tai Chi classes

Take a break from the phone, computer, and TV

Have a quiet car

Eat a meal in silence

Go for a walk by yourself (dogs allowed)

Spend time outdoors

Do something you enjoy but rarely do (Listen to music, draw, dance, go to a kid's movie)

Put yourself first, self-care is not selfish.

Beth Mulligan, PA-C

Mindful-Way
Stress Reduction Programs

www.mindful-way.com

www.sscim.uci.edu

