



# **The Science of Resilience**

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**CEO**

**Pure Edge, Inc.**

# Who We Are

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**Pure Edge, Inc. (PEI)** is a private operating foundation that provides direct service to organizations through professional development & strategy thought partnership.

PEI also provides grants to national organizations that advance the work of whole child development & SEL.

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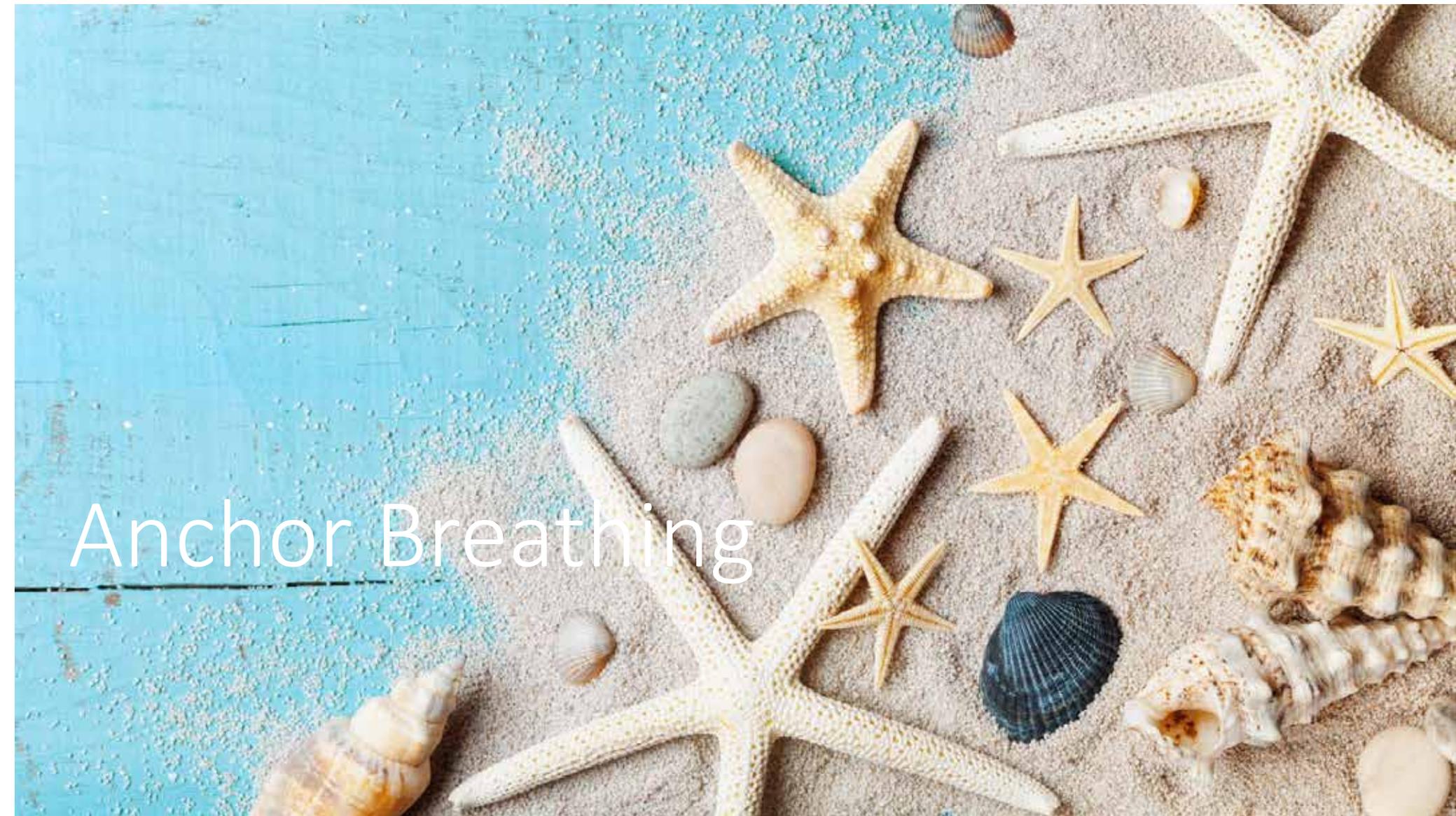




# Reflection

What is on your mind?  
*or*  
How are you feeling?

# Anchor Breathing



Neuroscience is clear.  
How we *think* is affected  
by  
how we *feel*.

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One feeling I often  
had in school was...

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- A. I love learning.
- B. I am so stressed out.
- C. I feel connected and seen.
- D. I am dumb.
- E. I am bored.



Who was the most influential in your schooling?

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- A. Family
- B. Friends
- C. Coach
- D. Teacher
- E. Other



“The three most important aspects of learning —**attention, focus, and memory**— are all controlled by our emotions, not by cognition.”



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Brackett Ph.D., M. (2019). *Permission to Feel: Unlocking the Power of Emotions to Help Our Kids, Ourselves, and Our Society Thrive*. New York, NY: Celadon Books.



# Why Focus on School Stress?

In highly stressed school environments, teachers and learners pay the costs.



When teachers are highly stressed, students show lower levels of both social adjustment and academic performance.

Sources (clockwise from 40-50%): Ingersoll, Merrill & Stuckey (2014); Greenberg, Brown, Abenavoli (2016); School Leaders Network (2014); Rentner, Kober, Frizzell, (2016); Alliance for Excellent Education (2014).

## Principal & Superintendent Stress

- ❖ **Principals:** physical and psychological effects, burnout, flat-out emotional exhaustion, and depersonalization.
- ❖ **Superintendents:** high cholesterol, high blood pressure, obesity, gastrointestinal problems, insomnia, anxiety, sleep apnea, and chronic headaches



## STRESSOR: Pandemic (CDC)



•Health-related fear



•Worsening of chronic health problems



•Sleep problems



•Increased use of alcohol, tobacco, and other drugs



•Eating problems



•Isolation

•50% of 20K responders reported feeling lonely (Cigna Survey)



•Concentration problems



•Racial and ethnic minority groups

39%

college students had anxiety disorders

51%

high school students experienced anxiety

40%

early childhood teachers  
signs of depression

**Anxious**  
**Fearful**  
**Worried**  
**Overwhelmed**  
**Sad**

42%

principals considered leaving

75%

K-12 teachers felt anxious

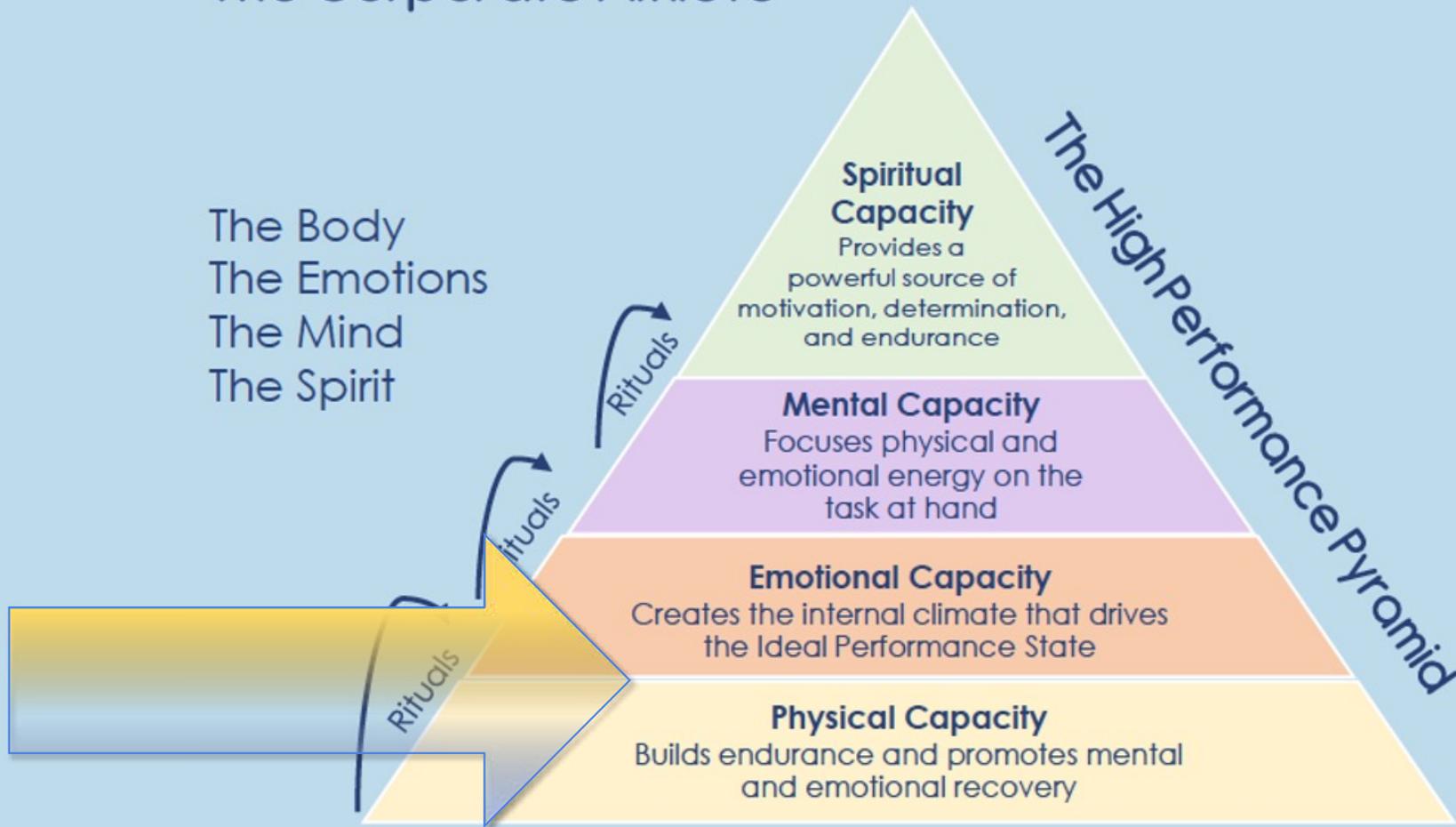
95%

school leaders' feelings were "negative"



# The Corporate Athlete

The Body  
The Emotions  
The Mind  
The Spirit



Loehr, J. & Schwartz, T., *The Making of a Corporate* Harvard Business Review, January 2001.





Where do you feel  
**stress**  
in your body?

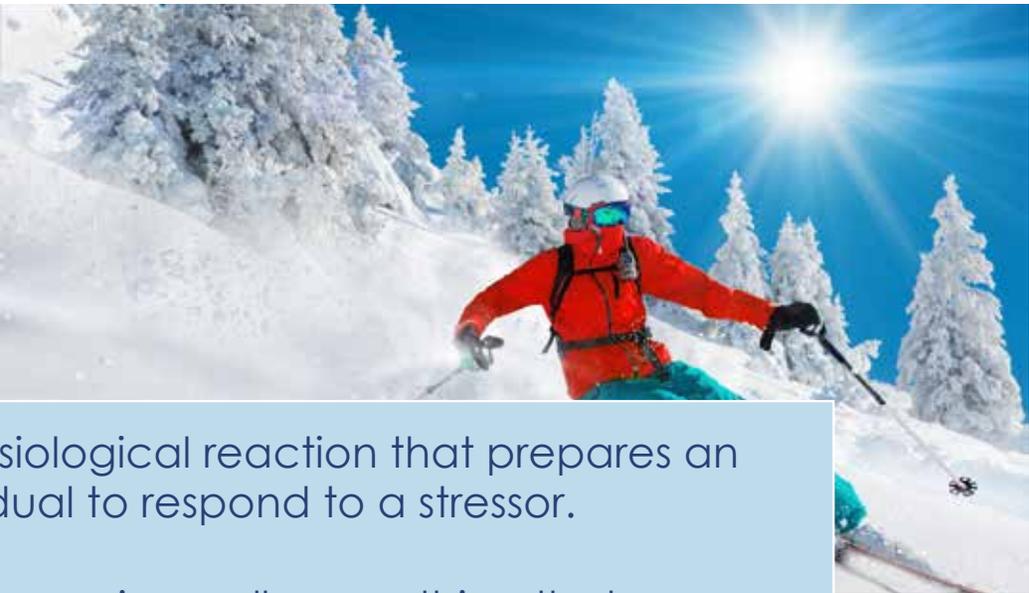




JOY



**What is stress?**



A physiological reaction that prepares an individual to respond to a stressor.

**What is a stressor?**

The stressor is usually something that threatens the well-being or homeostasis (stable equilibrium) of the individual.



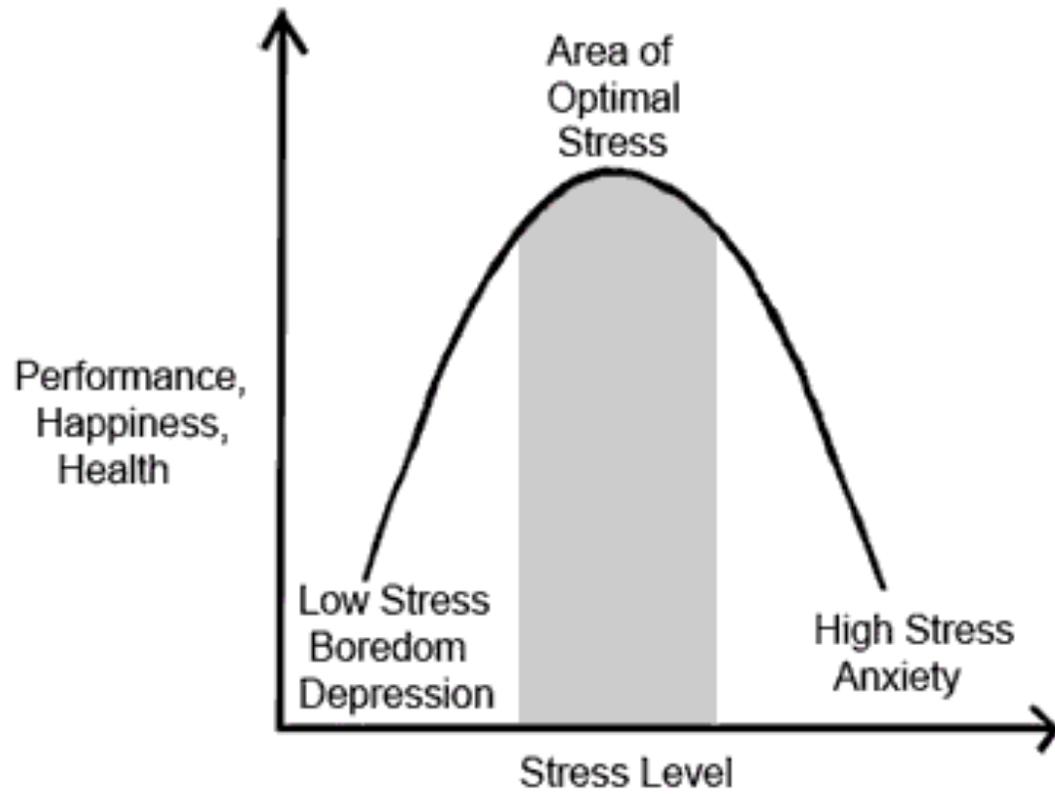
## Benefits

- ❖ Positive challenge
- ❖ Motivates us to take action
- ❖ Promotes well-being
- ❖ Enhances performance

## Detriments

- ❖ No relief in sight
- ❖ Makes us physically sick
- ❖ Weakens immune system
- ❖ Impairs performance

STRESS



# Stress Accumulates

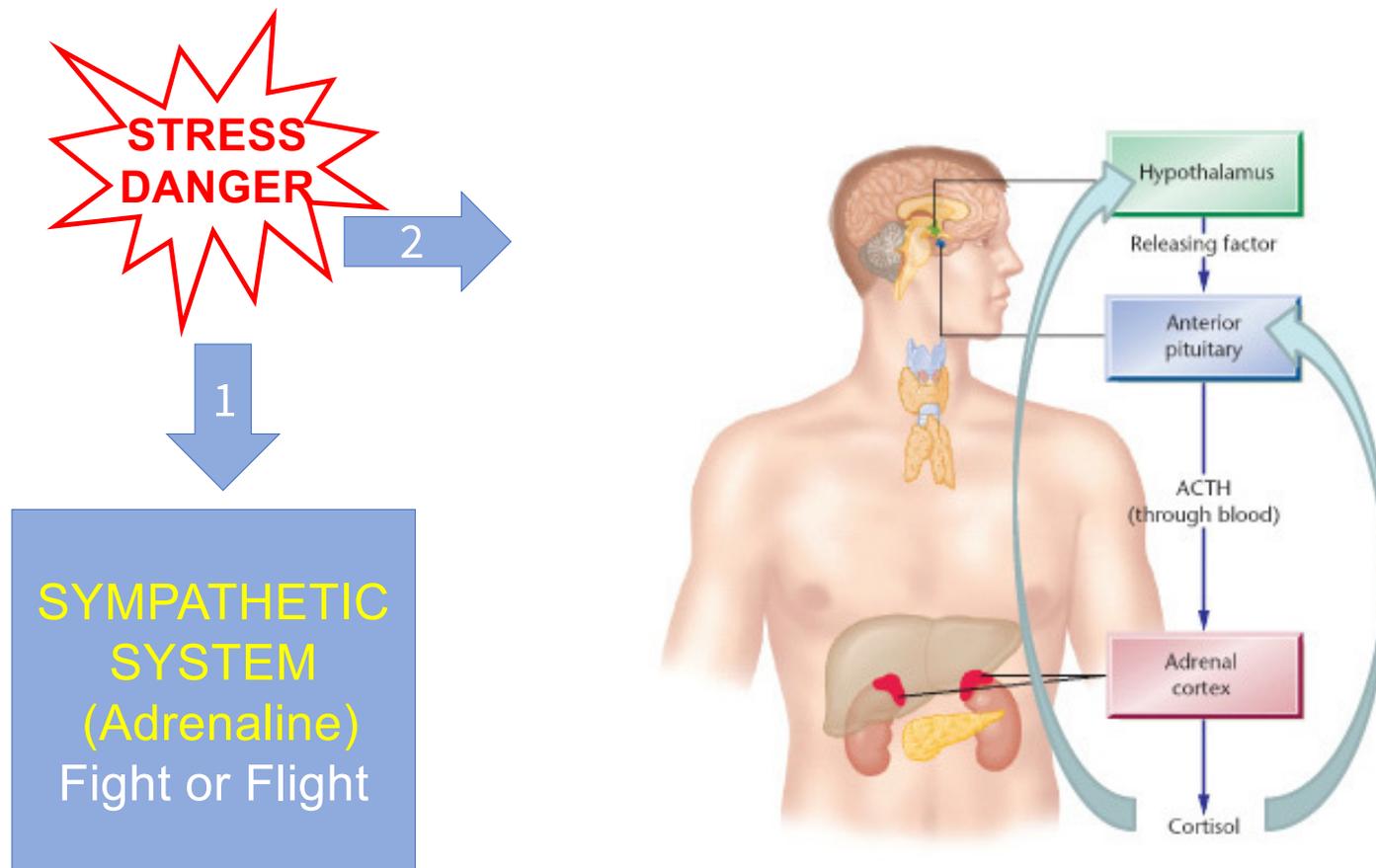


# Allostatic Load

**Allostatic load** is "the wear and tear on the body," which accumulates as an individual is exposed to repeated or chronic stress.



# STRESS AND THE BODY: THE HPA AXIS



# Stress Is Contagious



**Higher cortisol levels** were found in students whose teachers reported high levels of stress and burnout.

Researcher **Kimberly Schonert-Reichl** urges educators to be aware of their own mindsets and to ***practice mental wellness exercises to reduce their stress levels.***

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How we *think* is  
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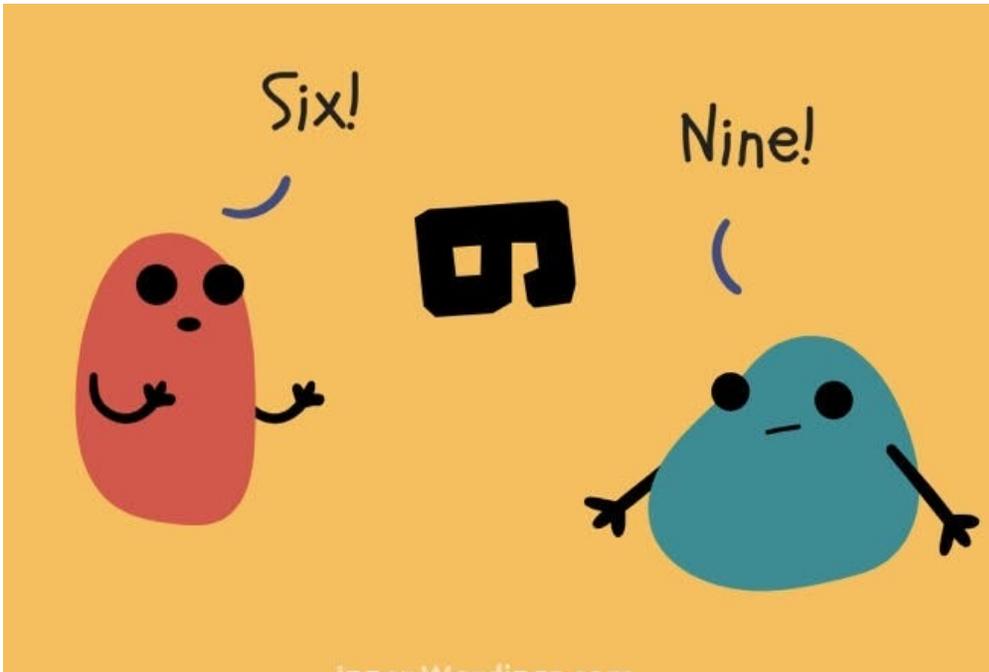


# Bias

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An inherent or learned prejudice against a thing, person, or group when compared with another.<sup>1</sup>

Nearly all humans share a **negativity bias**, that is...our tendency to hold on to or collect negative information in the form of **memories** or **impressions**.



1: [Bias](#) | Definition of Bias by Merriam-Webster





Image: <https://www.relevantinsights.com/blog/10-cognitive-biases>

# Negativity Bias

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Negativity bias can take the shape of:

- ❖ Excessive worry
- ❖ Anxiety
- ❖ Frustration
- ❖ Aggression
- ❖ Judgement

**Sometimes it leads us to look for or expect danger.**

# Negativity Bias

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For example, studies have found that:

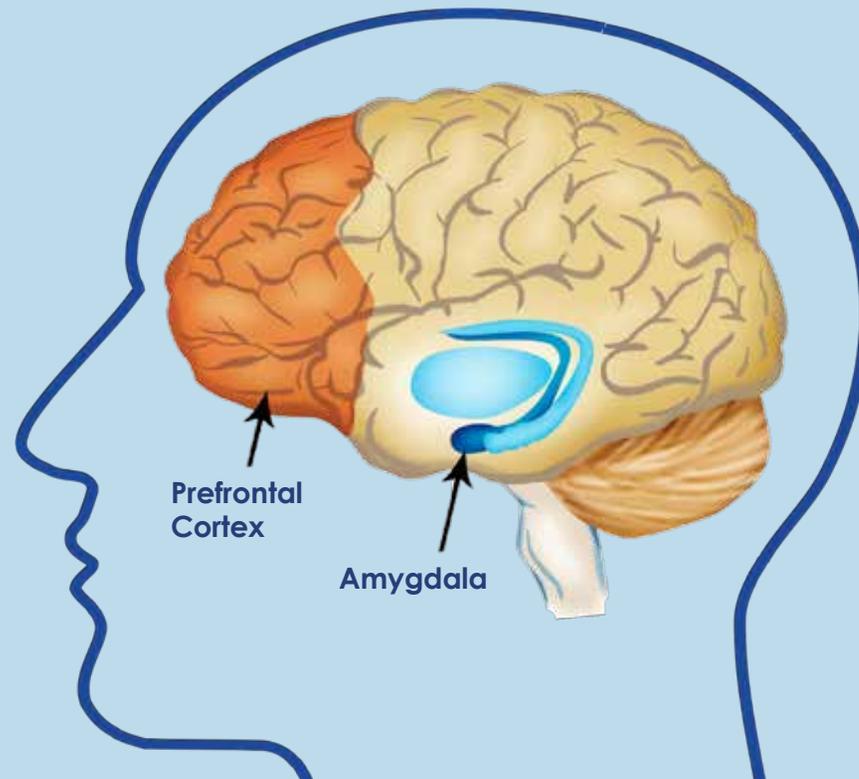
- **In a relationship**, it typically takes five good interactions to make-up for a single bad one.
- People will work much harder to **avoid losing \$100** than they will work to gain the same amount of money.
- **Painful experiences** are much more memorable than pleasurable ones.<sup>1</sup>



1: Hanson, Dr. Rick, Take in the Good, May 5, 2020.

Image: Paauw, Kathy, Life Management, Managing Priorities and Relationship Building, November 6, 2018

# Self-Regulation & the Brain

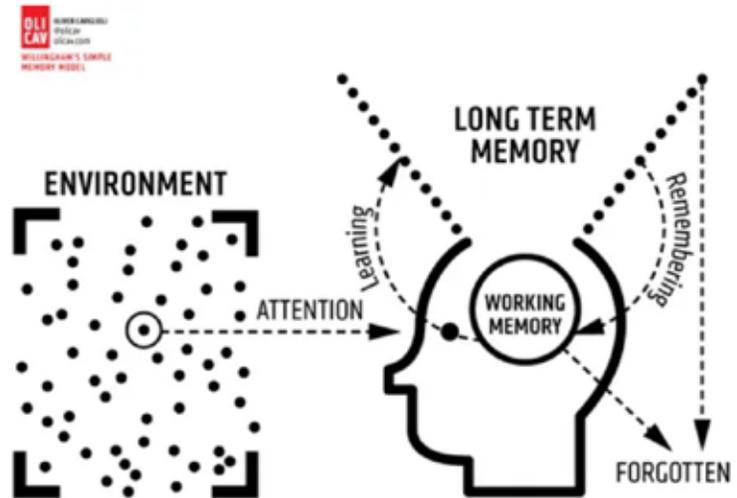


# Belonging & Cognitive Load Theory

Experience of school is inextricably linked with learning and well-being.

When physical, emotional, and identity and safety needs are not met, and lack of supportive relationships, learners are more likely to disengage from key behaviors that are important for learning.

## Working Memory



Credit – Oliver Caviglioli

Breathe

Move

Rest



# Benefits of Nasal Breathing

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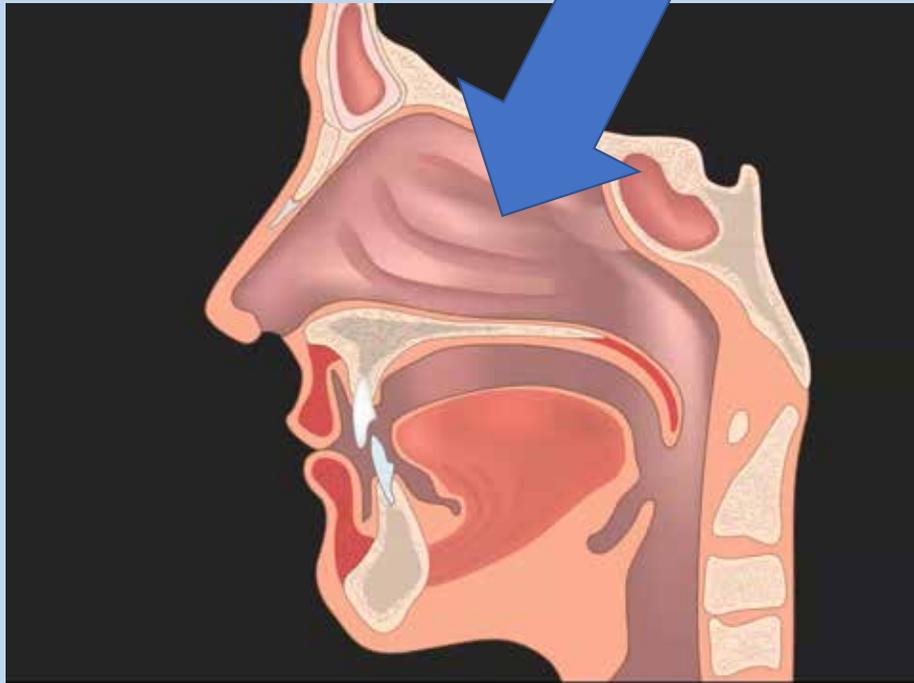
- ❖ Filters dust and impurities from the air
- ❖ Warms the air to body temperature
- ❖ The diaphragm is more easily controlled, which supports the development of internal core strength
- ❖ More control over lengthening the breath (extended exhalations help activate the parasympathetic nervous system)
- ❖ Increased oxygen from nasal breath increases energy and vitality

Northwestern University. "Rhythm of breathing affects memory, fear: Breathing is not just for oxygen; it's also linked to brain function, behavior." ScienceDaily. ScienceDaily, 7 December 2016. [www.sciencedaily.com/releases/2016/12/161207093034.htm](http://www.sciencedaily.com/releases/2016/12/161207093034.htm)  
This Photo by Unknown Author is licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)



**"Breathing properly can allow us to live longer and healthier lives."**

**-James Nestor**



Breathing poorly can exacerbate or cause:

- ❖ Asthma
- ❖ Anxiety
- ❖ ADHD
- ❖ Hypertension
- ❖ Sleep apnea
- ❖ Snoring
- ❖ and more.

# Does It Matter How We Breathe?

## Nasal Breathing & Extended Breaths

- Lung capacity increases
- 20% more oxygen absorbed
- Heart relaxes
- Respiratory & nervous systems cohere
- Blood pressure decreases

## Mouth Breathing

- Body moisture sapped
- Lungs irritated
- Soft tissue of mouth flexes, leaving less space to breathe



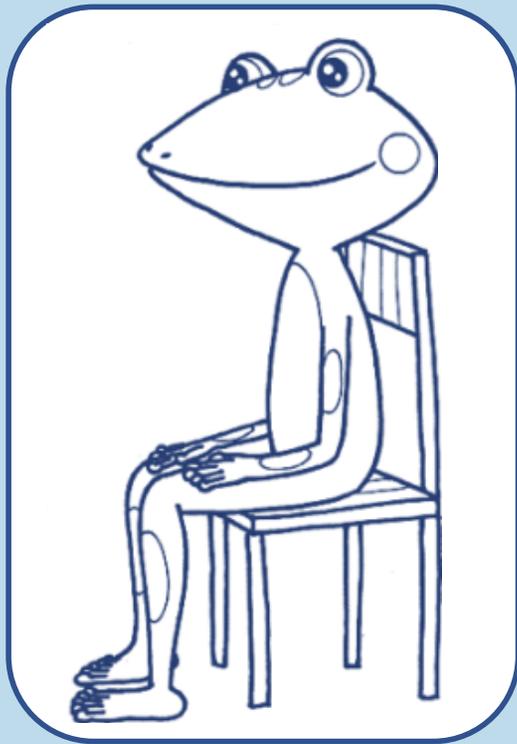
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Nestor, J. (2020, May 21). The Healing Power of Proper Breathing. Retrieved from [www.wsj.com/articles/the-healing-power-of-proper-breathing-11590098696](http://www.wsj.com/articles/the-healing-power-of-proper-breathing-11590098696)





# Engaging Activity: Even In – Even Out



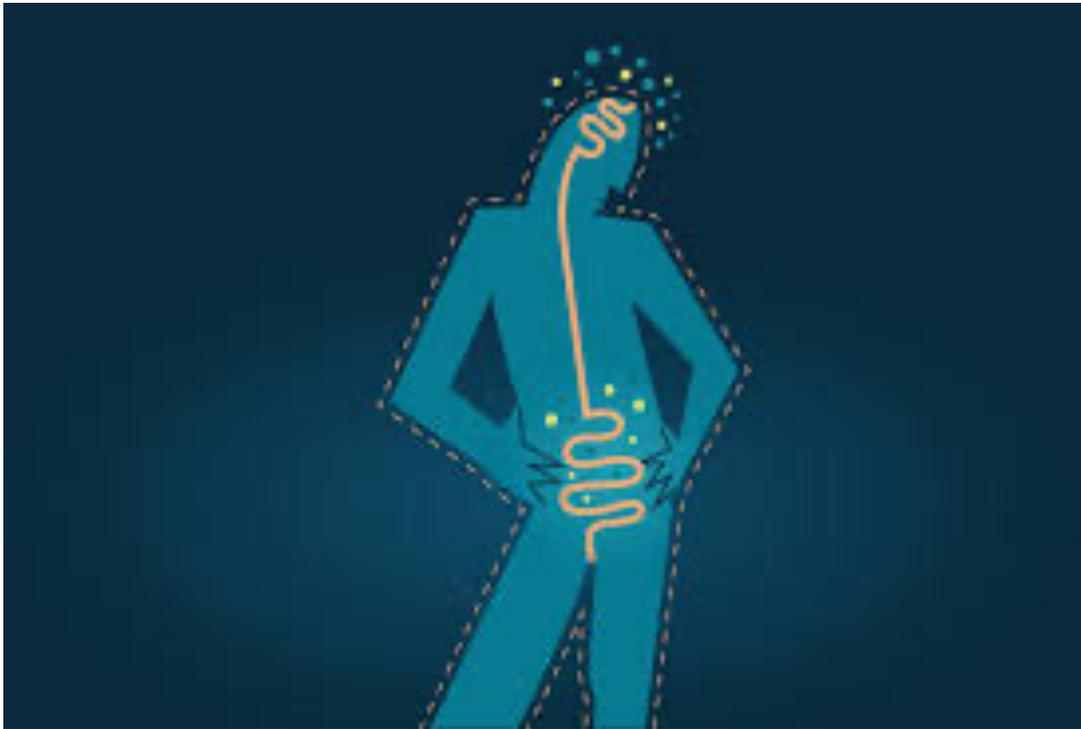
# Vagus Nerve

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Latin for “wanderer,” which is appropriate for the longest cranial nerve in the body.

**It is intricately connected to:**

- Mood
- Immune response
- Digestion and
- Heart Rate<sup>1</sup>



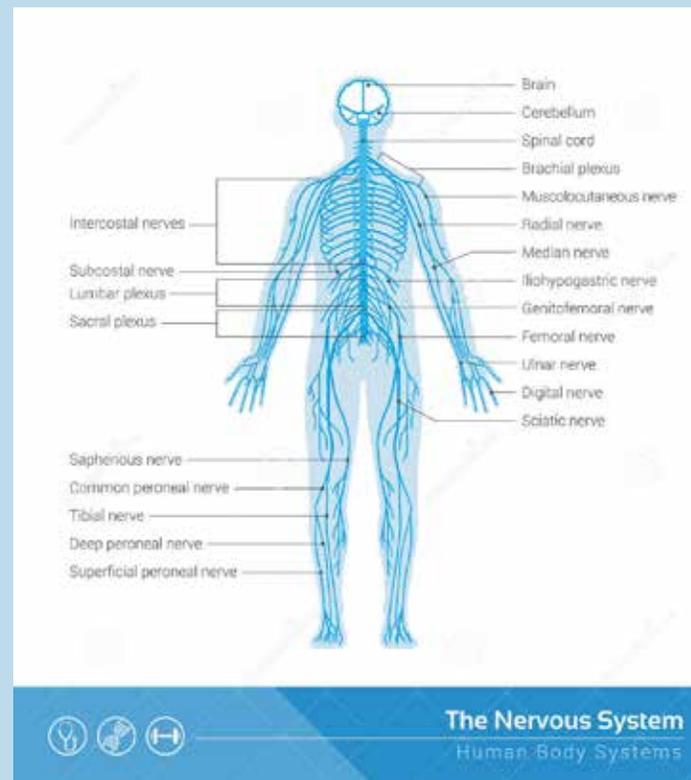
<sup>1</sup>Breit, Sigrid, et al. "Vagus Nerve as Modulator of the Brain-Gut Axis in Psychiatric and Inflammatory Disorders", *Frontiers in Psychiatry*, 13 March 2018

Image: Gersema, Emily, "Gut Instinct may have been the GPS of human ancestors." USC News:  
<https://news.usc.edu/144479/vagus-nerve-research-gut-instinct-may-have-been-gps-of-early-humans/>

# Vagus Nerve: Autonomic Nervous System

The body's unconscious control system

Regulating, internal organs to optimizing health, growth and restoration also known as **homeostasis**.<sup>1</sup>



1: Porges, Stephen, "The Pocket Guide to the Polyvagal Theory," (New York: W.W. Norton & Company, Inc., 2017), 15  
Image Source: <https://bodytomy.com/human-nervous-system-diagram>



“  
The real enemy of high performance is not stress...the problem is the absence of disciplined, intermittent recovery. Chronic stress without reserves depletes energy reserves, leads to burnout and breakdown, and ultimately undermines performance.

The Making of a Corporate Athlete – Jim Loehr & Tony Schwartz  
Harvard Business Review 2001

”



# Reflection

On average, (in the past 7 days) : How many hours per day did you spend...



# Reflection

The Body:

Exercising -  
doing something  
physical



Sleeping



Emotions:

Self & Building  
Relationships



The Mind

Learning, creating,  
thinking...



The Spirit

Quiet / Flow



## Engaging Activity: Starfish Breathing or Take Five



**Breathe** \_\_\_\_\_



# RESILIENCE

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- Resilience needs to be cultivated.
- Being resilient does not mean the absence of difficulty or distress.
- Resilience is not a trait -- it can be learned and acquired; it's a process.

## Misconceptions about resilience

No behavioral symptoms = resilience

Children are resilient by virtue of being children

You are born with it

You are either resilient or not

Resilience is rare

Resilience is absolute

# Science of Resilience & Support Factors

Presence of a  
Caring Person

Creativity

Ability to  
sooth self

Emotional  
Regulation

Perseverance

Cognitive  
Flexibility



**WHAT HAPPENS DURING  
THE ACUTE AND  
CHRONIC STRESS  
PHASES MATTERS FOR  
WHO RECOVERS**

# Resilience

Capacity to respond to stress while maintaining positive developmental outcomes

- Components:

- Caring Person
- Emotional regulation
- Cognitive flexibility
- Creativity

It is a dynamic process and multi-dimensional

***Resilience***

***is a***

***Four Letter Word:***

***LOVE***



**L**laughter





O

optimism



V

enue



**E**

motion Regulation



*Laughter*

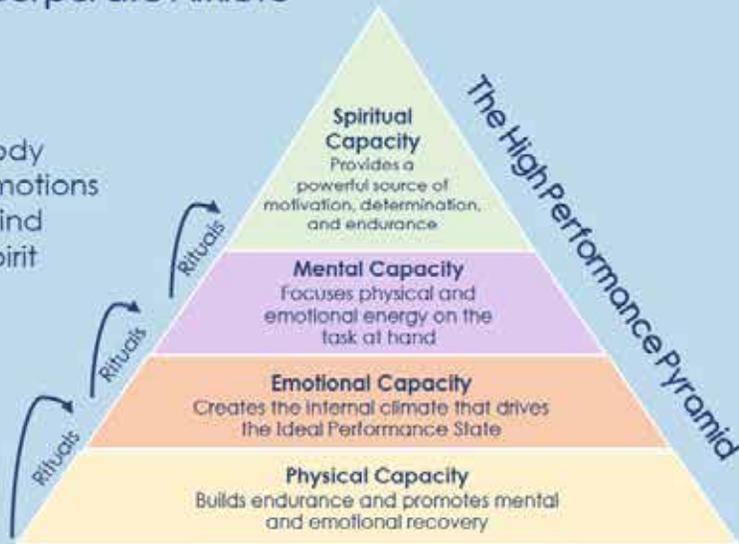
*Optimism*

*Venue*

*Emotion Regulation*

## The Corporate Athlete

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Loehr, J. & Schwartz, T., *The Making of a Corporate Athlete* Harvard Business Review, January 2001.

“The real enemy of high performance is not stress... the problem is the absence of disciplined, intermittent recovery. Chronic stress without reserves depletes energy reserves, leads to burnout and breakdown, and ultimately undermines performance.”

*The Making of a Corporate Athlete*  
Jim Loehr & Tony Schwartz  
Harvard Business Review, 2001

## How DO you manage your 1440 to give you maximum recovery?



*The Healthy Mind Platter for Optimal Brain Matter*, Copyright © 2011 David Rock and Daniel J. Siegel, M.D. All rights reserved.

## The Big 7

- Mindful breathing
- Sleep
- Nutrition
- Exercise
- Building and maintaining positive relationships
- Doing things that are meaningful to you (hobbies/entertainment)
- Positive self-talk, including self- and other-compassion, acceptance, reappraisal, visualization, and problem-solving.

Dr. Marc Brackett, *Permission to Feel*

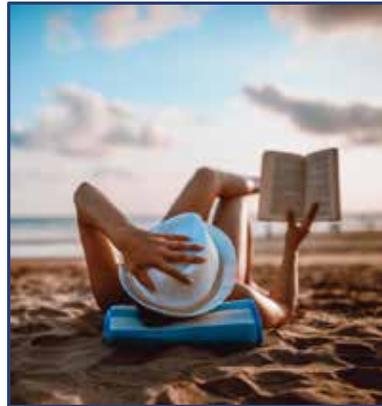
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& Co

# How do you manage your 1440?



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<https://blog.medstarwashington.org/2017/12/29/glaucoma-exercise-lower-eye-pressure/>  
<https://www.everythingzoo.com/arts-entertainment/2020/11/22/books-beach-summer-reads/>

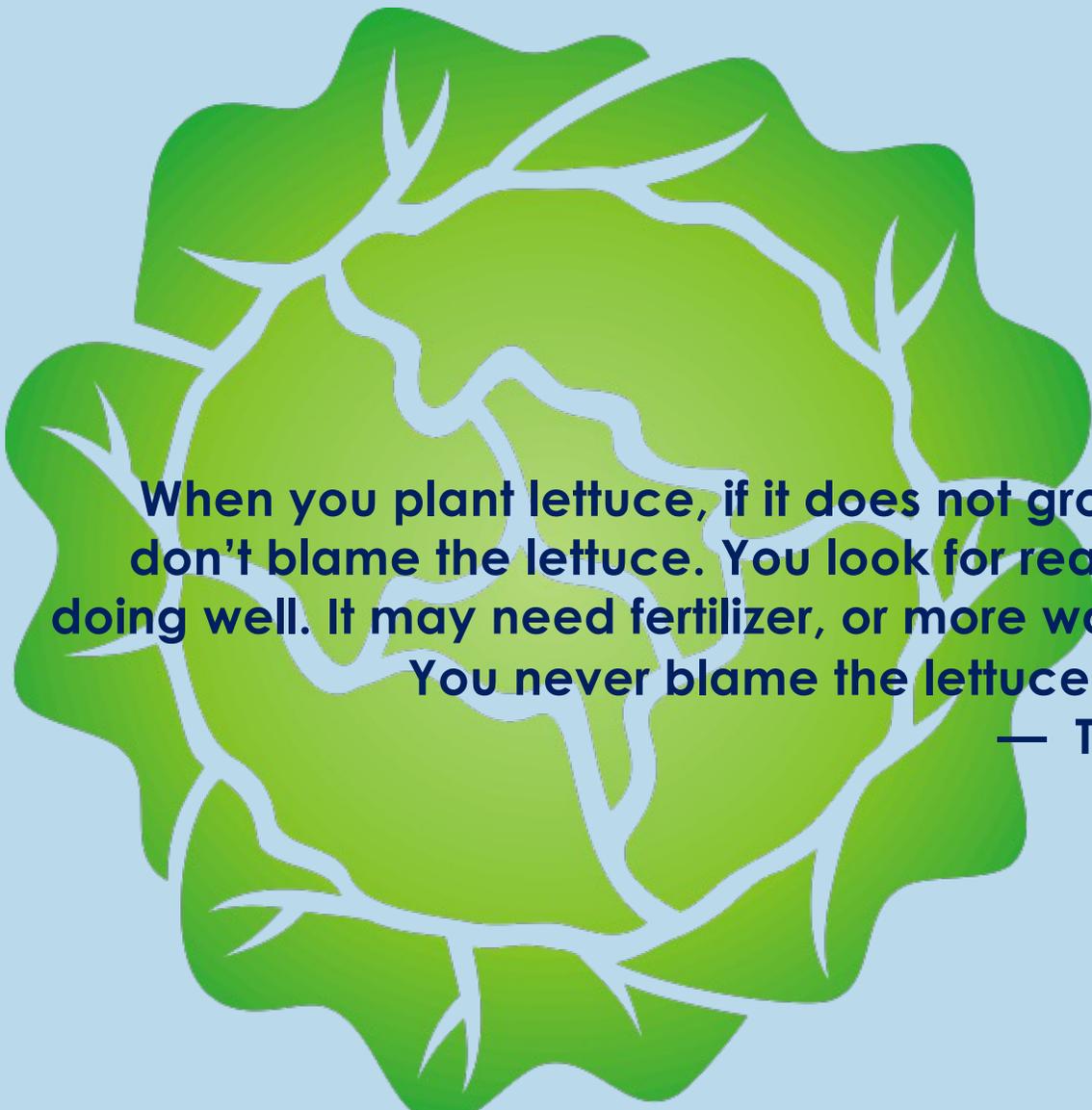
<https://www.hollister.com/en/OstomyCare/OstomyLearningCenter/LivingWithAnOstomy/Top6HealthyEatingTipsForPeopleWithOstomies>



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**When you plant lettuce, if it does not grow well, you don't blame the lettuce. You look for reasons it is not doing well. It may need fertilizer, or more water, or less sun. You never blame the lettuce.**

**— Thích Nhất Hạnh**



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