

# The Neuroscience of Wellness

*How to Train Your Brain to Improve Mood through Movement, Breathing, and  
Nourishment*

*with Kali Coughlin Paredes, LMFT 104309*



# agenda

WHY THE BRAIN?

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OUR NERVOUS SYSTEM

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MOVEMENT

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BREATHING

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NO



# introduction

My name is Kali Paredes and I am a Licensed Marriage and Family Therapist. My background is in neuroscience and today we will be discussing the neuroscience of wellness. We will be covering ways in which movement, breathing, and nourishment can signal happiness and a sense of calm in our brain and body.

To understand any of it, we need to first understand the basics of the brain!



why our brain?



# brain parts

## Reptilian Brain

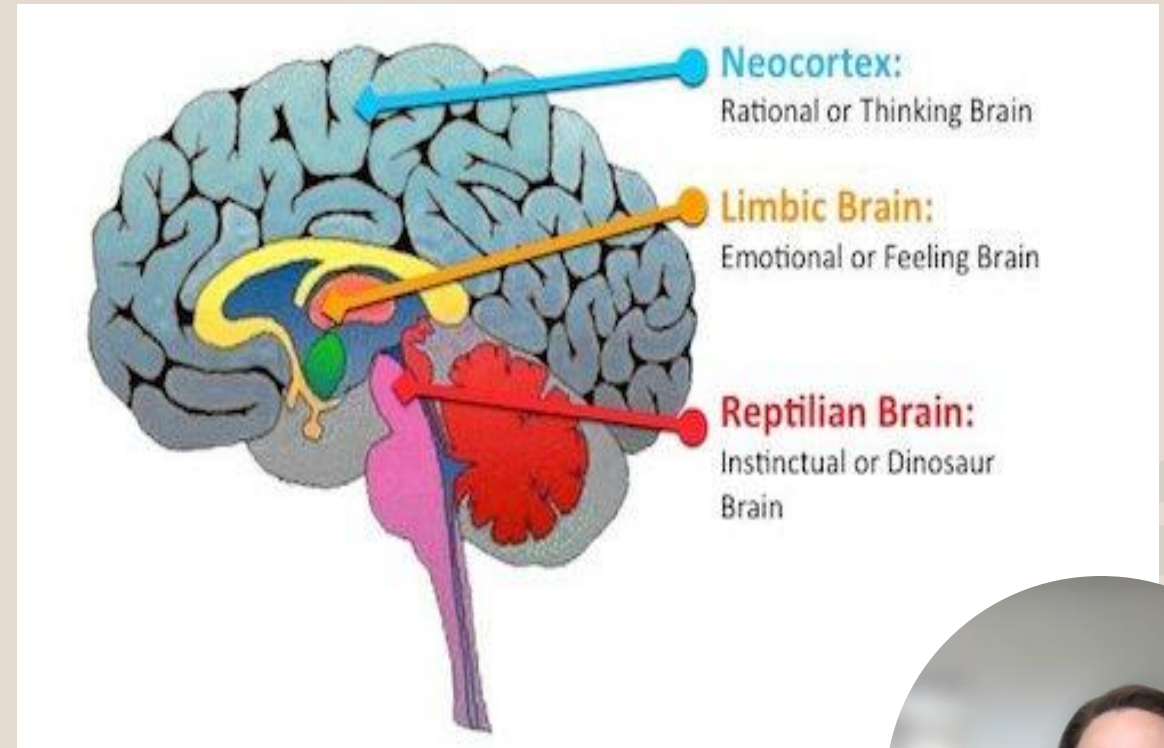
- Medulla: Heart rate and breathing
- Thalamus: Sensory router

## Limbic System

- Amygdala: Emotion
- Hypothalamus: Pituitary gland aka “Master gland” → hormone secretion (cortisol)

## Neocortex

- Frontal Lobe: Judgment + Decision-making
- Parietal Lobe: Sensory input and processing



# neurotransmitters

## ENDORPHINS

Pain relief

“Feel good  
chemical”

“Runner’s high”

## DOPAMINE

Pleasure/reward

Learning

Movement

Attention

## SEROTONIN

Mood (happy/sad)

Sleep

Hunger

Em



# OUR NERVOUS SYSTEM

“The great thing, then, in all education, is to make our nervous system our ally instead of our enemy.”

- William James



# sympathetic nervous system



## ACTIVATION

External or internal stimuli



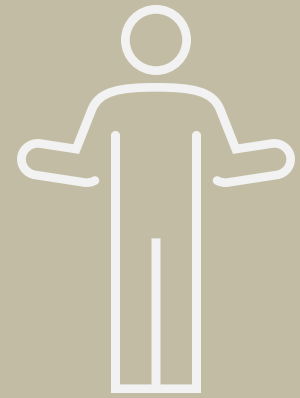
## FIGHT

Boost of adrenaline, defensiveness



## FLIGHT

Boost of adrenaline and cortisol



## FREEZE

Paralyzing





# parasympathetic nervous system



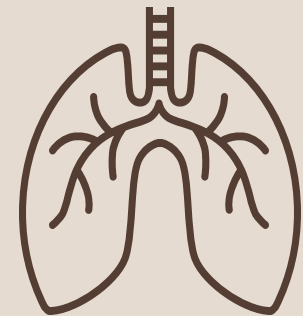
PUPILS  
CONSTRICT



HEART RATE  
SLOWS



STIMULATES  
DIGESTION



SLOW  
BREATHING



# ways to activate the PNS

MOVEMENT

**Increases serotonin and dopamine, decreases cortisol and adrenaline**

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BREATHING

**Activates the vagal nerve, calms the fight-or-flight state**

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NOURISHMENT

**Provides building blocks for serotonin, dopamine, and myelination**

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# movement

## DANCING

Any form gets blood pumping, cortisol down, and dopamine up

## WALKING

An increase in blood flow reduces cortisol levels in the body

## RUNNING

Endurance sports increase serotonin and dopamine

## TAPPING

Bilateral stimulation  
"butterfly hugs"

## GET CRE



# breathing

## DEEP BELLY BREATHING

- Activates the vagal nerve for a calming effect
- Increases mindfulness + distracts from stress
- 4-6-8 breath technique

## DIAPHRAGMATIC BREATHING

- Allows you to use your lungs at 100% capacity
- Increases oxygen in the blood/body

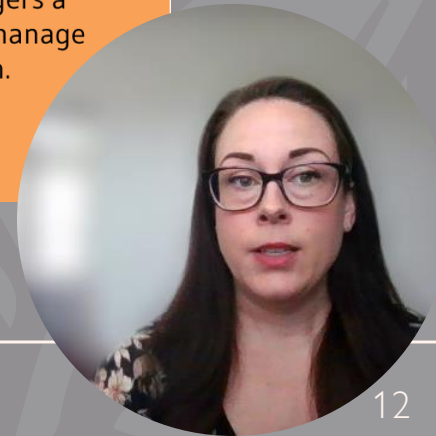
### 4-6-8 Breath

Breathe in as much as possible for 4 seconds. Hold that breath for 6 seconds. Exhale for 8 seconds.  
**Everybody try it now!**



Because this slow breathing triggers a relaxation response, helping you manage stress for best brain function.

[www.happybrainscience.com](http://www.happybrainscience.com)



# nourishment

## MAGNESIUM-RICH FOODS FOR ANXIETY

Leafy greens

Nuts

Pumpkin seeds

Cashew butter

Avocado

Chickpeas

## SEROTONIN-BOOSTING FOODS FOR HAPPINESS

Poultry and eggs

Soy products

Dairy products

Nuts and seeds

Pineapple

Leafy greens

## DOPAMINE-BOOSTING FOODS FOR PLEASURE

Fruits (fructose)

Avocados

Beets

Chocolate

Coffee

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# thank you

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