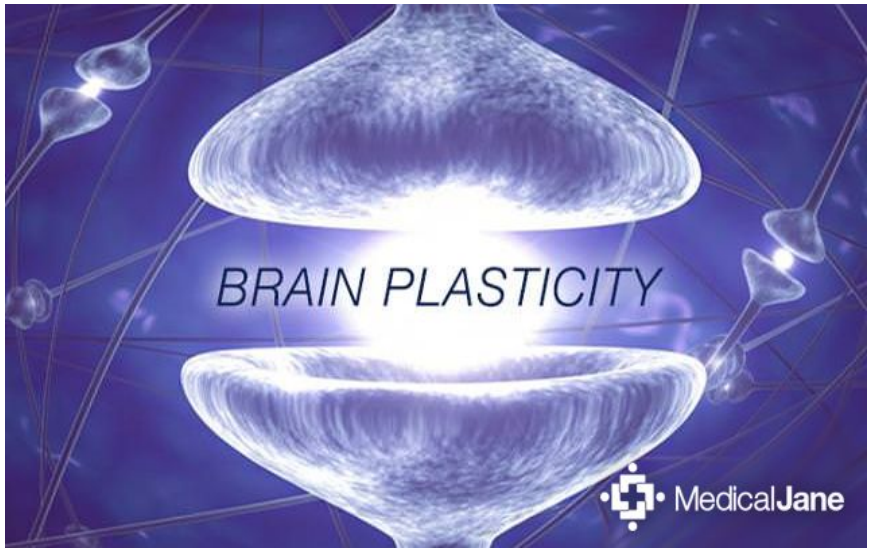
Understanding Neuroplasticity

The Science of Changing your Mind



Shawn Tepper-Levine, D.O.
November 10, 2020

Four Main Components That Nourish Our Body

1. The Foods We Eat
2. The Water We Drink
3. The Air We Breathe
4. The Thoughts We Think


YOUR TASK IS NOT TO SEEK FOR LOVE, BUT MERELY TO SEEK AND FIND ALL THE BARRIERS WITHIN YOURSELF THAT YOU HAVE BUILT AGAINST IT.
Rumi
AZ QUOTES

The Thoughts We Think

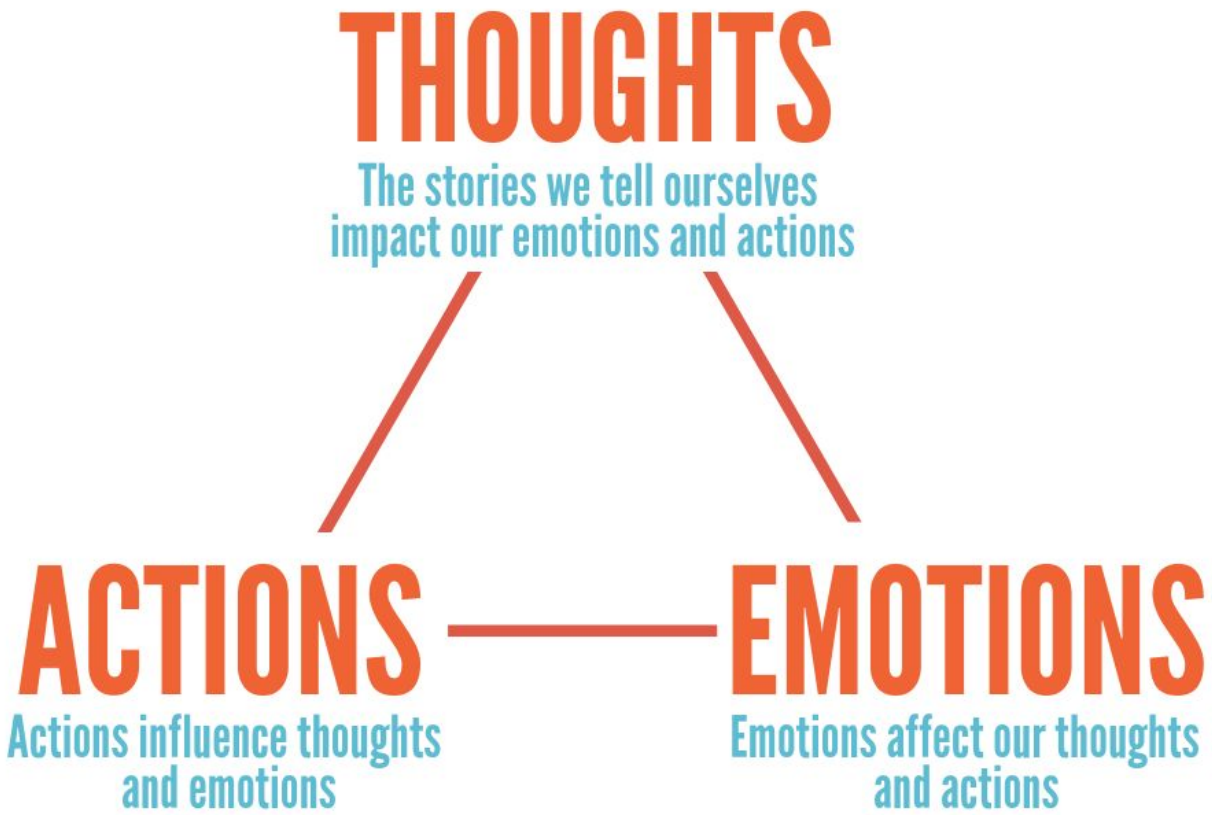
- Our thoughts influence our health
- Negative thoughts and attitudes promote a stress response
- Chronic negative thinking can become a habit
- A prolonged stress response leads to dis-ease
- We can change our thoughts and reverse dis-ease through the mechanism of neuroplasticity

“Brain exercises may be as useful as drugs to treat diseases as severe as schizophrenia – that plasticity exists from cradle to the grave, and that radical improvements in cognitive functioning – how we learn, think, perceive, and remember are possible even in the elderly."

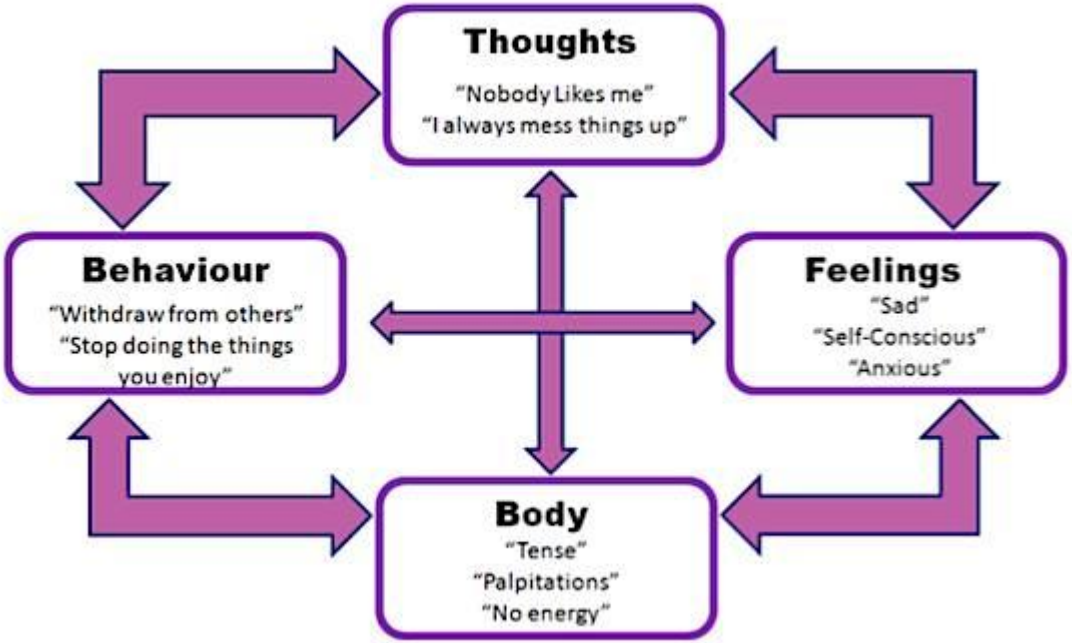
Dr. Michael Merzenich

Professor Emeritus, UCSF
Kavli Laureate in Neuroscience

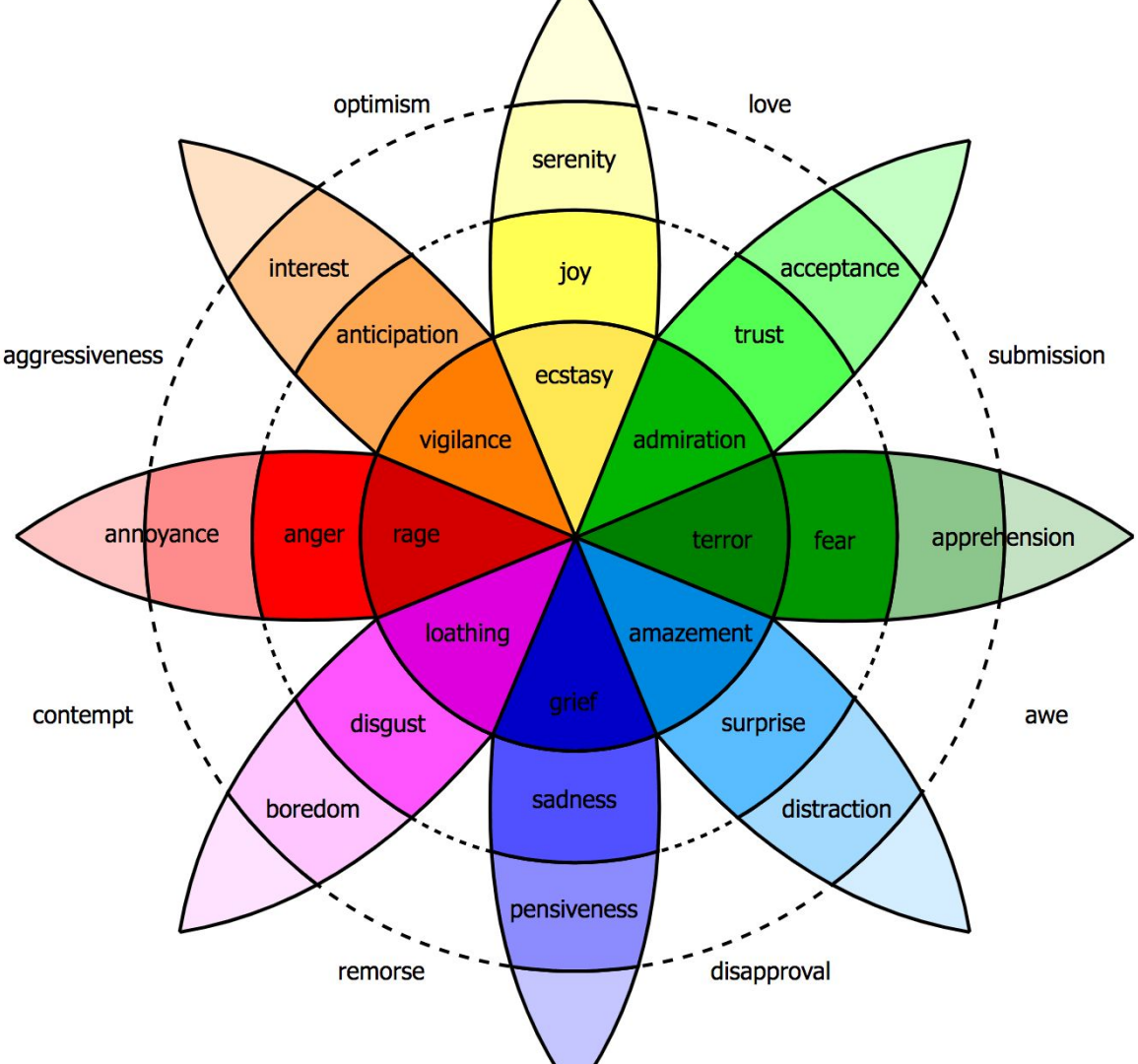
Our Thoughts, Emotions and Behaviors are Reciprocally Interrelated

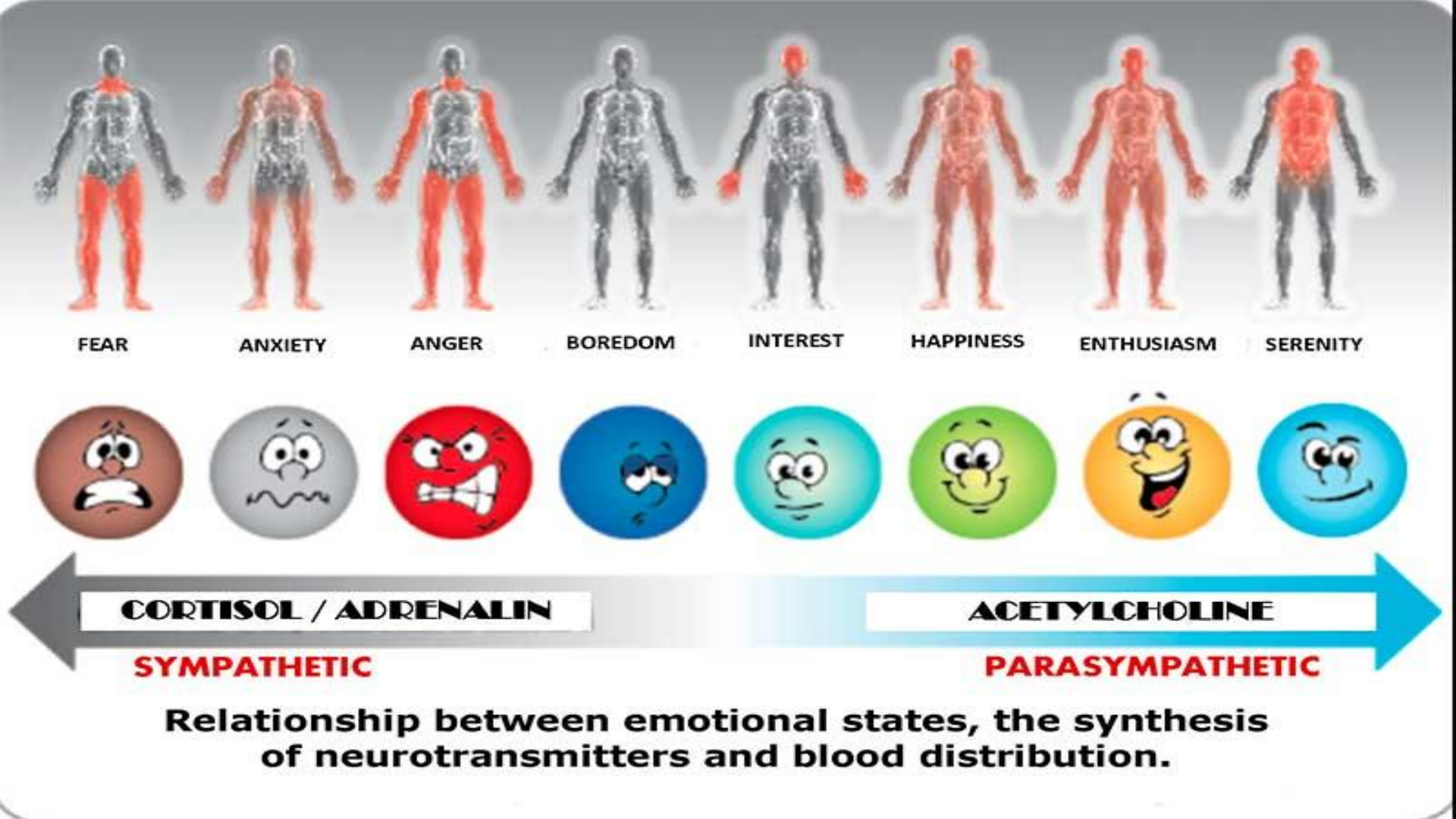


Example of Stress Response Feedback Looping



Humans Express A Full Spectrum Of Emotions

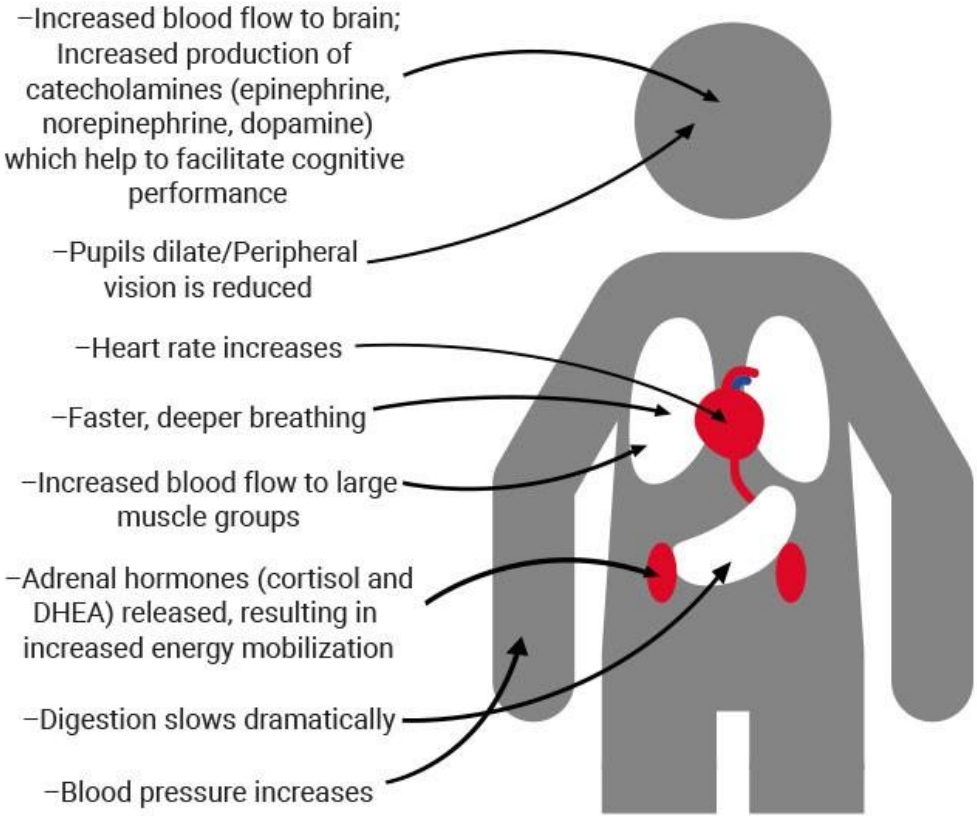




Relationship between emotional states, the synthesis of neurotransmitters and blood distribution.

"FIGHT OR FLIGHT"

ACUTE STRESS RESPONSE



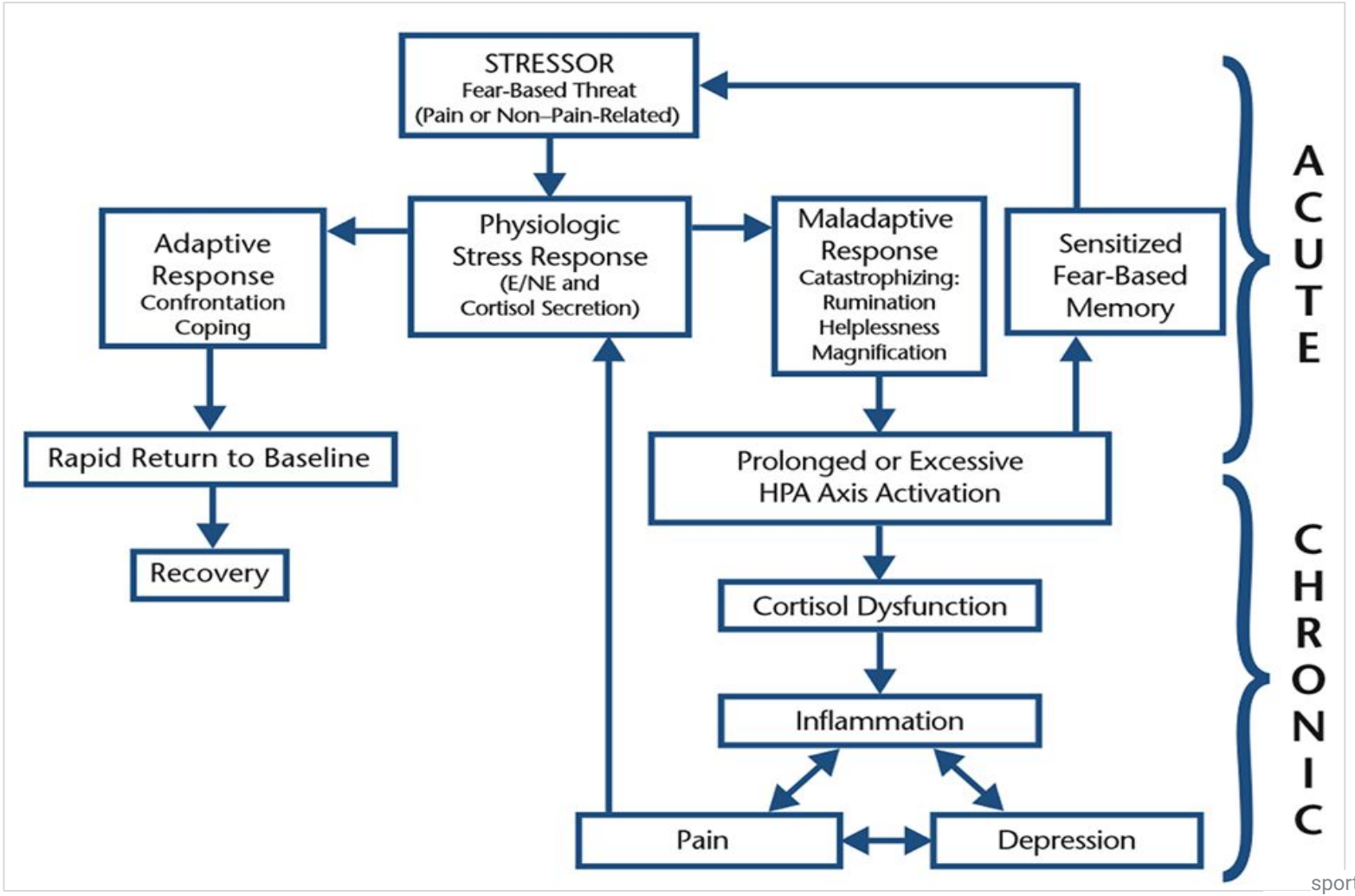
REACTIONS

–Increased alertness
–Increased short term strenght
–Increased ability to handle stress
–Heightened ability to focus
–Increased oxygen to the brain
–Faster, deeper breathing
–Heightened sense of smell
–Body and mind are hyper-alert

OTHER RESPONSES

–Perspiration increases to cool body
–Muscle tension increases to prepare for "fight or flight"
–Saliva production decreases
–Metabolism speeds up considerably
–Inflammation increases
–Blood flow from skin surface is diverted to larger muscle groups & brain
–Body extremities can change temperature
–Blood pressure increases

https://www.polar.com/



“Central Nervous System Facilitation”

“Post Traumatic Stress Disorder”

“Sympathetic Overtone”

“Brain Injury”

Are all Terms to Describe a Maladaptive Stress Response

Predisposing Factors For Getting Stuck In a Chronic Maladaptive Stress Response

- Birth Trauma
- Early Childhood Stress or Trauma
- Repetitive Stressors or Trauma
- Traumatic Brain Injuries
- Hardwired programs in your brain from habitual negative thinking and reactivity
- Emotional Addictions

5 Stages of Neuroplastic Healing Described by Norman Doidge, MD

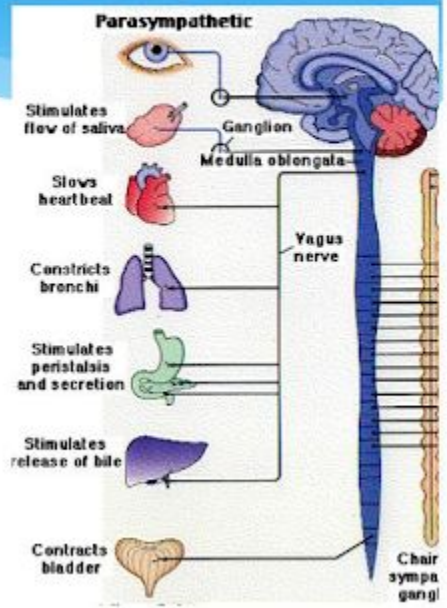
The Brain's Way of Healing: Remarkable Discoveries and Recoveries from the Frontiers of Neuroplasticity

1. Repair The Health of Nerve Cells
    a. Eliminate toxins
    b. Good nutrition
2. Neuromodulation
    a. Balancing the parasympathetic and sympathetic nervous system
3. Neuro Relaxation
    a. In a relaxed state the brain is available for learning
4. Neurostimulation of Nerve Cells
    a. Via repetitive sensory, mental or physical exercises
5. Neural Differentiation
    a. Once the brain is modulated and relaxed, attention is restored and the brain is better able to discern subtle differences in sensory experiences and to integrate them accurately.

Modulation via Activating the Parasympathetic Nervous System

Parasympathetic nervous system

* Keeps the body working efficiently and counterbalances the activity initiated by the sympathetic nervous system
* Restores the body to as state of calm, therefore maintaining homeostasis
* Dominates the sympathetic nervous system most of the time



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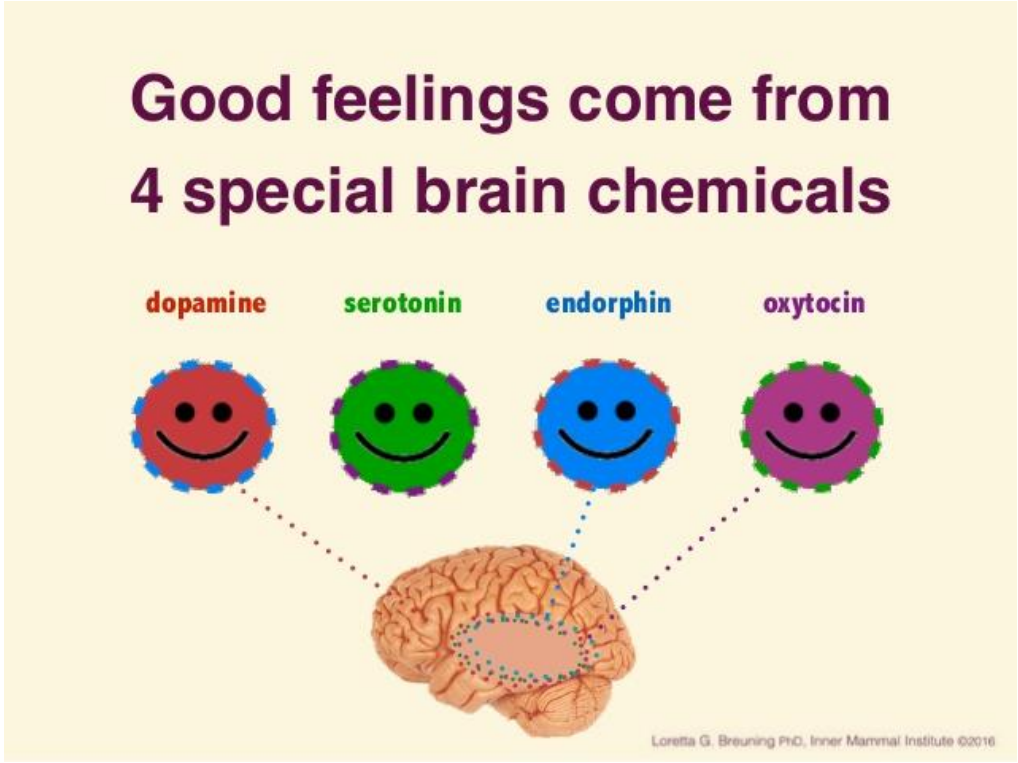
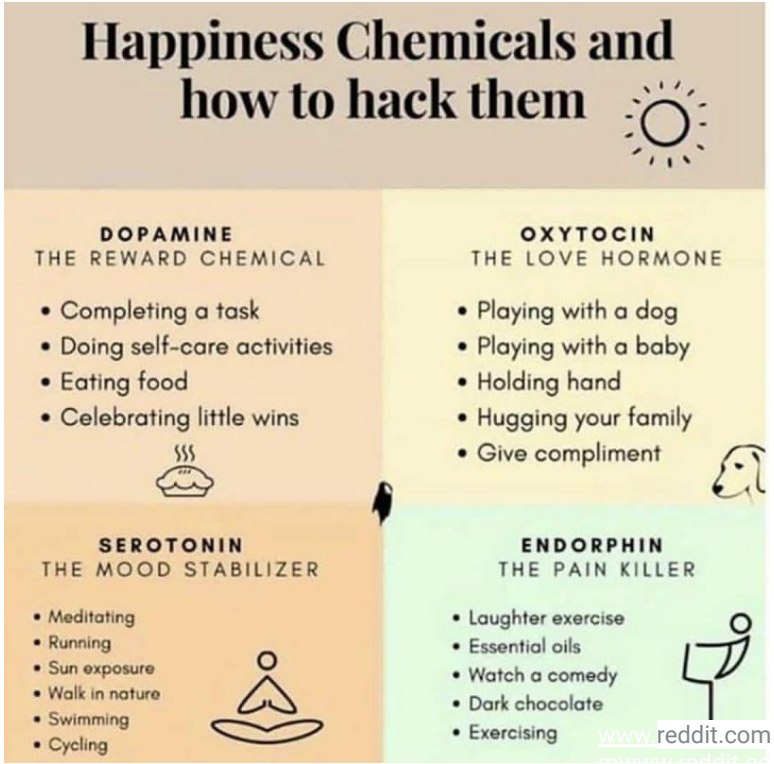
You Can Improve Parasympathetic Tone Yourself by Stimulating Your Vagus Nerve

Combat The Stress Response With Good Feelings





Review > Autoimmun Rev. 2006 Oct;5(8):523-7. doi: 10.1016/j.autrev.2006.02.010.
Epub 2006 Mar 21.

The immune system and happiness

Yoram Barak [1]

Affiliations + expand

PMID: 17027886 DOI: 10.1016/j.autrev.2006.02.010

Abstract

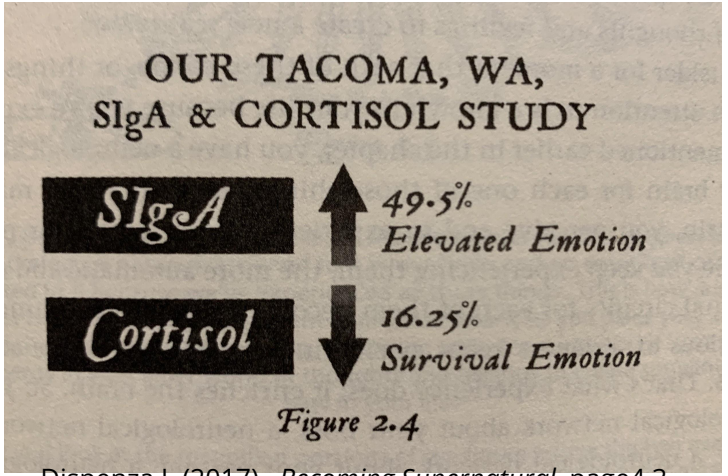
Human ability to experience negative and positive emotions has an evolutionary perspective and the presence of feelings designed to influence behavior should thus be reflected in physiological and immune interactions. The complex interactions between the immune system and the central nervous system have been studied extensively in schizophrenia and depression. On the other hand, effects of positive human emotions, especially happiness, on physiological parameters and immunity have received very little attention. Emotions are intimately involved in the initiation or progression of cancer, HIV, cardiovascular disease, and autoimmune disorders. The specific physiological responses induced by pleasant stimuli were recently investigated with the immune

The results revealed that an increase in secretory immunoglobulin A and a decrease in salivary cortisol were induced by pleasant emotions.

among physiological measures of affective style, psychological well-being, and immune function.

Dr. Joe Dispenza's SIgA Study in Tacoma Washington, 2016

- 117 test subject's secretory immunoglobulin A (SIgA) were measured at the start of his workshop and 4 days later
- During the workshop, test subjects were instructed to move into an elevated emotion (joy, love, gratitude, inspiration) for 10 minutes 3 times a day.
- The results are amazing:



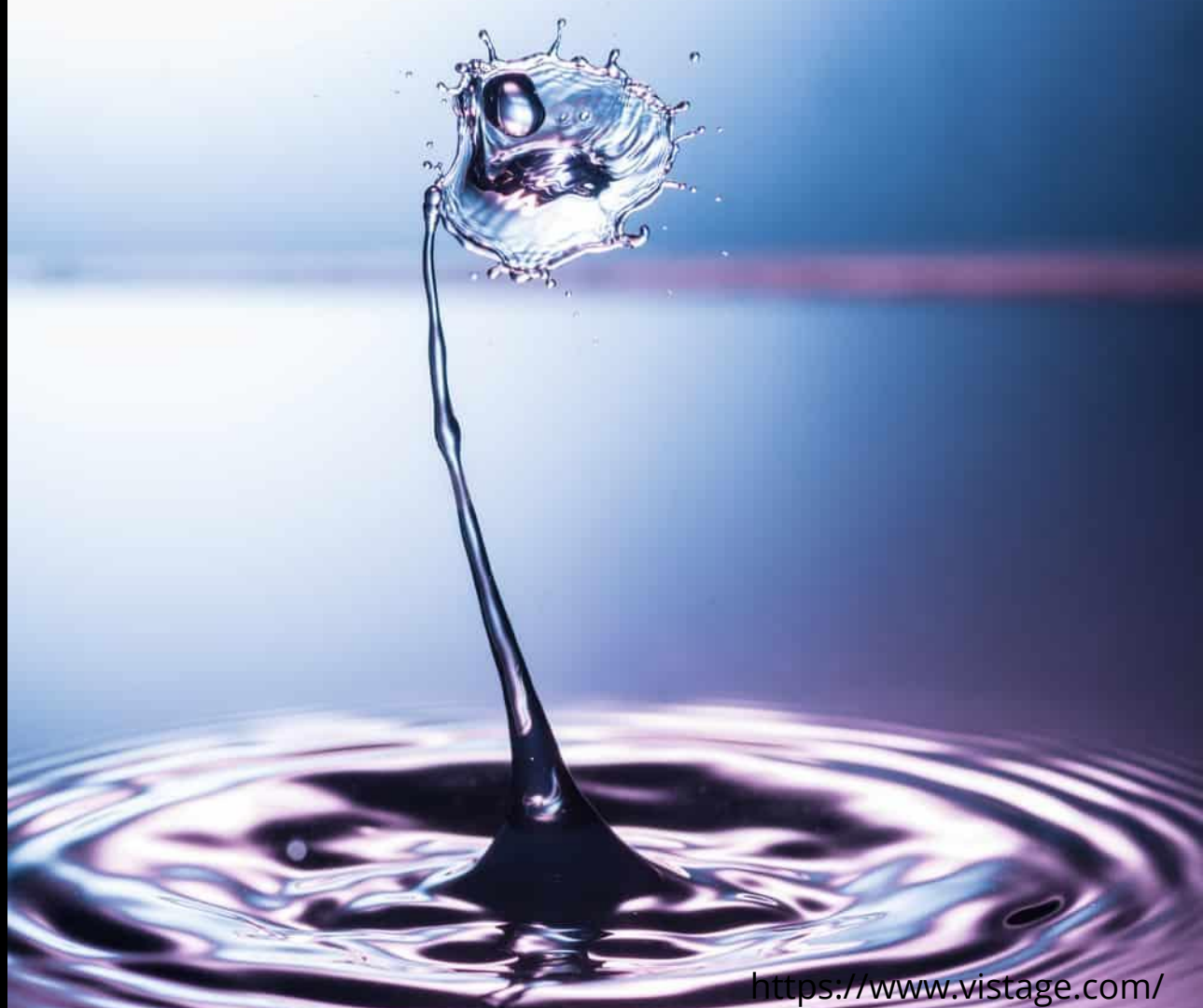
Dispenza J. (2017) , *Becoming Supernatural,* page4 3

The Ripple Effect:

What vibrational frequency do you want to tune into?

What vibrational frequency do you want to transmit?

What is the ripple effect within you and around you from the choice you make in each moment?



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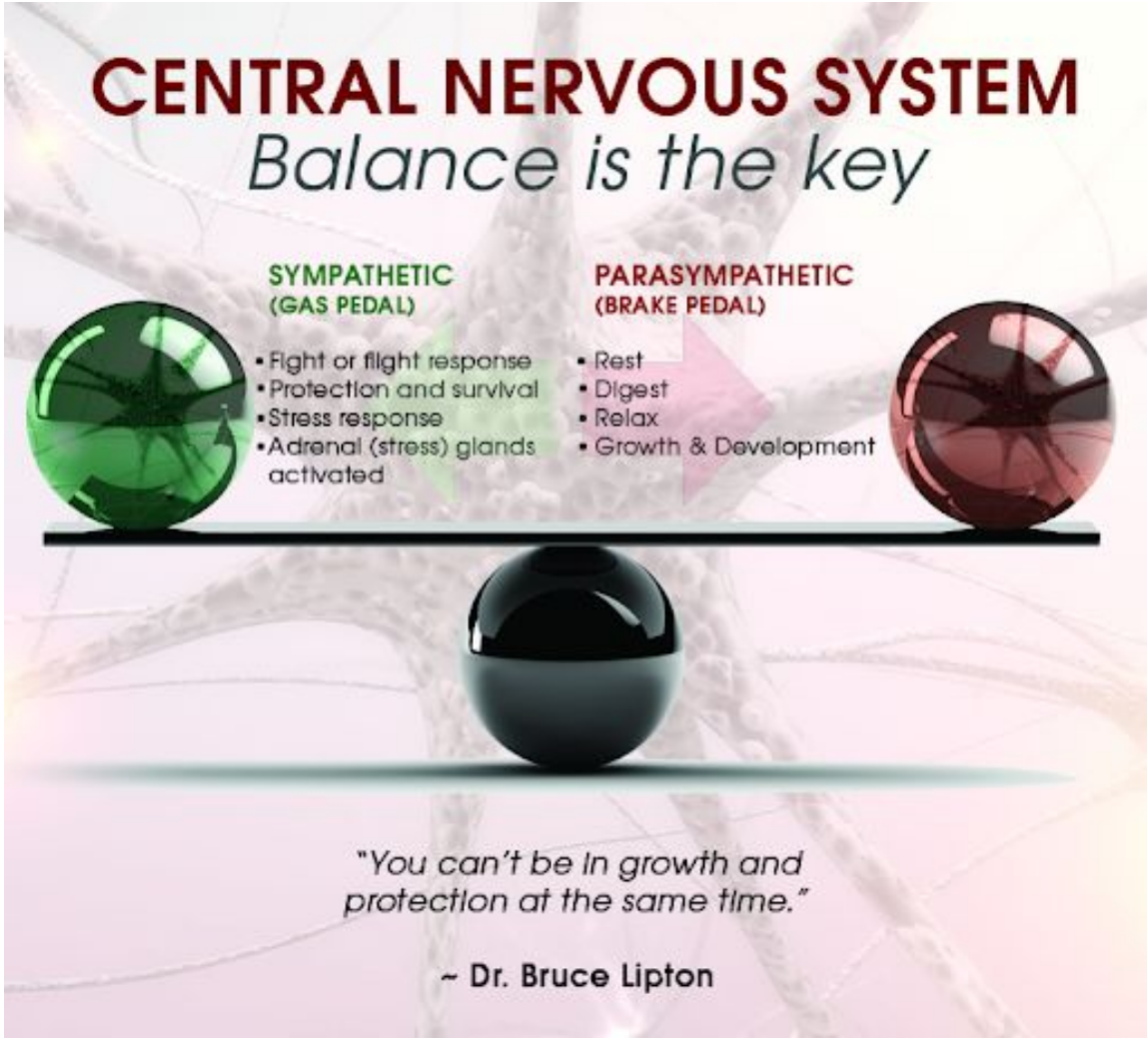

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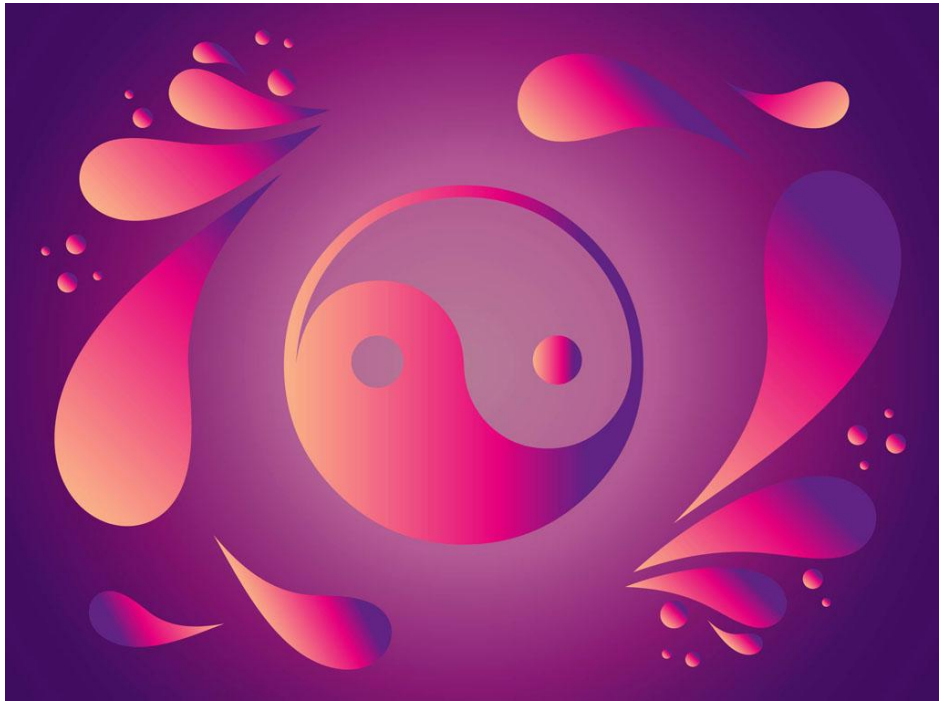
It Is Always Possible to Create Balance



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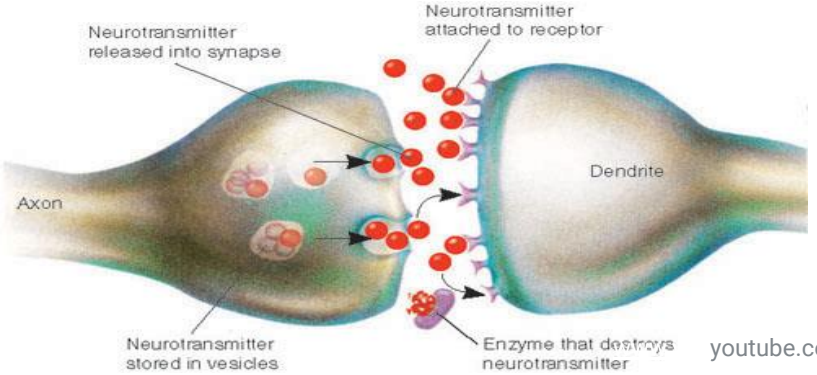
Because Our Brain Is Neuroplastic

How the Brain Communicates

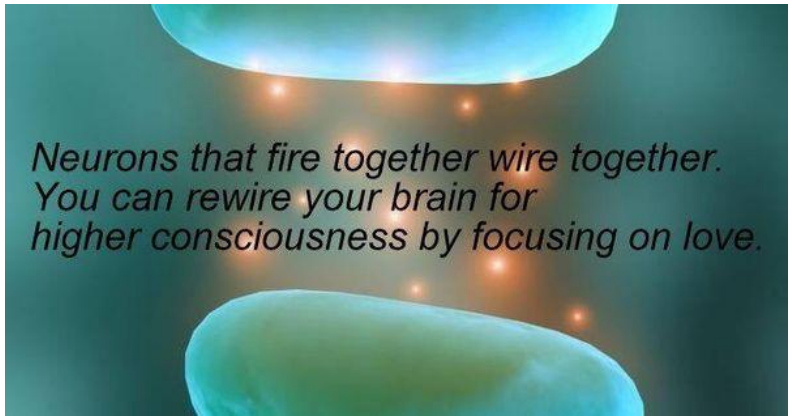
Neurophysiology 101

- **Neurons** are cells in the brain
- **Neurotransmitters** are chemicals released by a neuron to signal a message to a neighboring neuron
  - They are made up of substrates that we supply from our nutritional intake
  - They are stored in vesicles and are released when signalled
- **Neural Networks** are a team or community of neurons that fire together
- **Neuroplasticity** is the ability of the neural networks to change through growth and reorganization



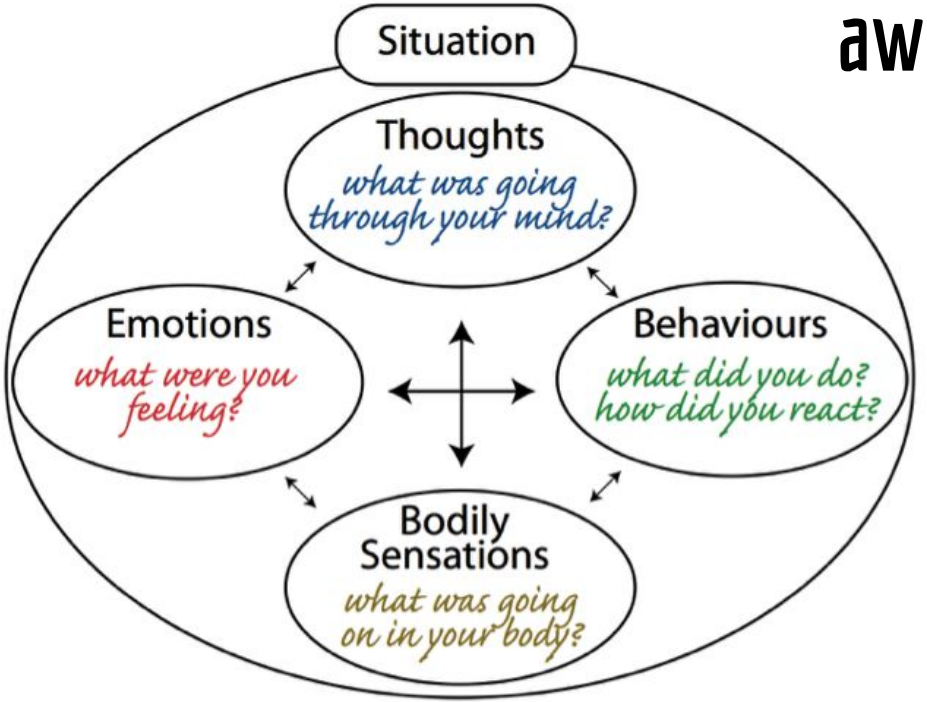
Hebb's Rule: "Neurons that Fire Together Wire Together"

- Neuropsychologist, Donald Hebb coined this phrase in 1949
- Describes how pathways in the brain are formed and reinforced through repetition



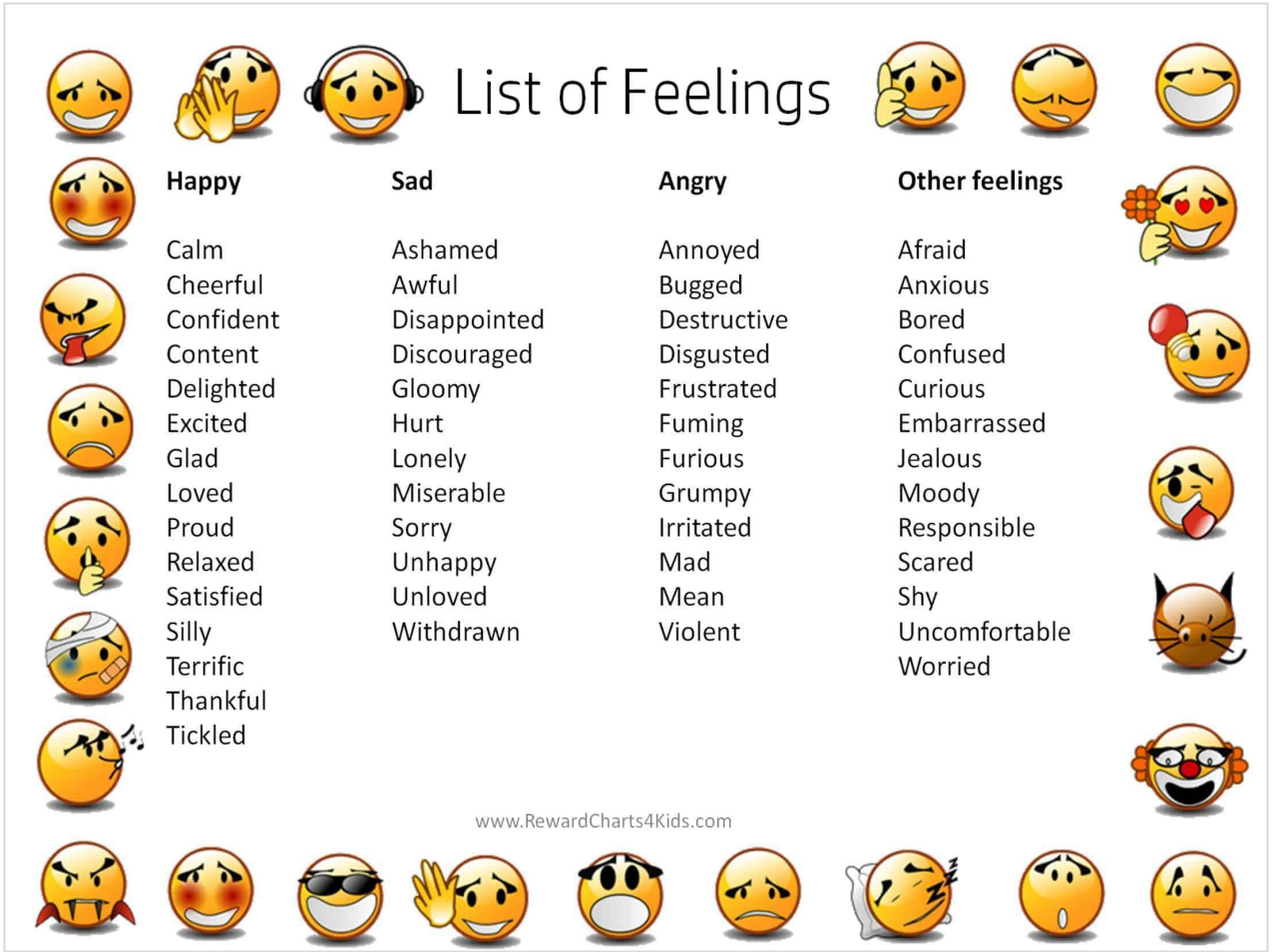
Building New Cerebral Architecture Requires:

- Learning: Through making new synaptic connections
- Remembering or Repetition: maintains and sustains these new connections
- The more meaning behind a new synaptic connection the more the neurons will fire together and wire together
  - Ex. Attaching an emotion to a thought will bring more meaning to that thought and create a stronger synaptic connection
- When we wire the brain differently we are literally changing our minds



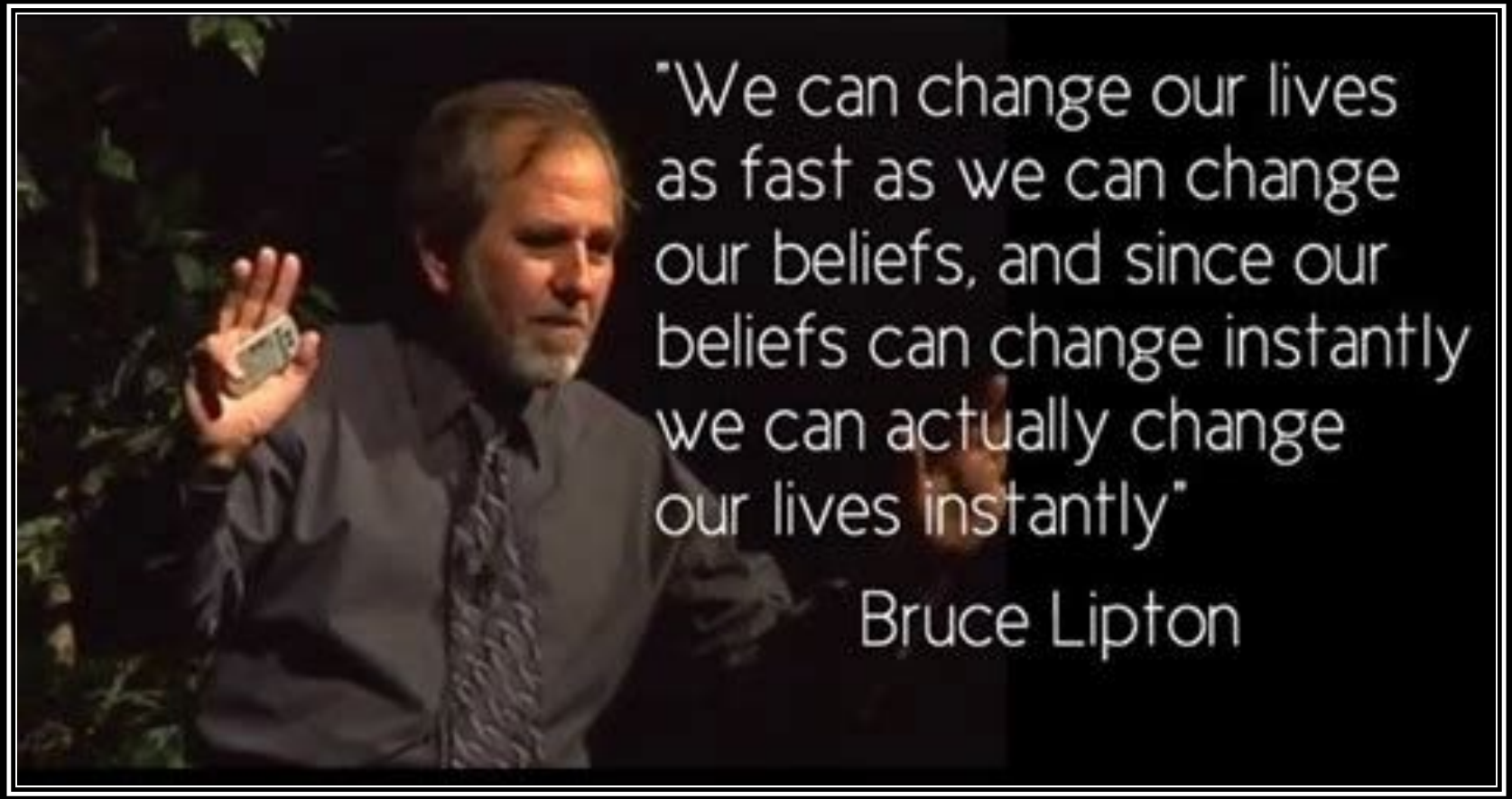
1st: Bring conscious awareness to your pattern

2nd: Chose To change



Identify your feeling by naming it.

But I've Been Stuck Like This For So Long.....

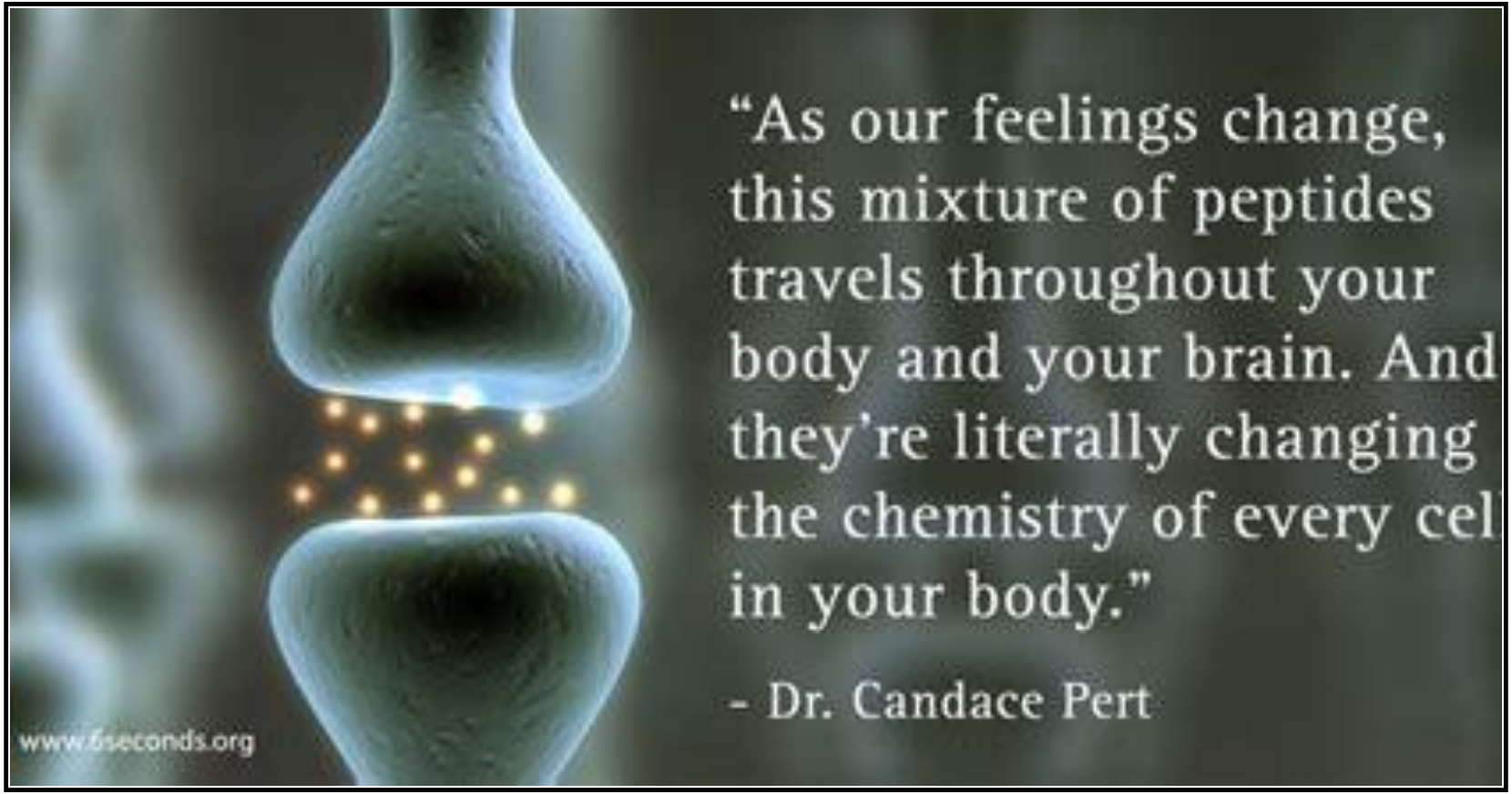


https://www.apa.org

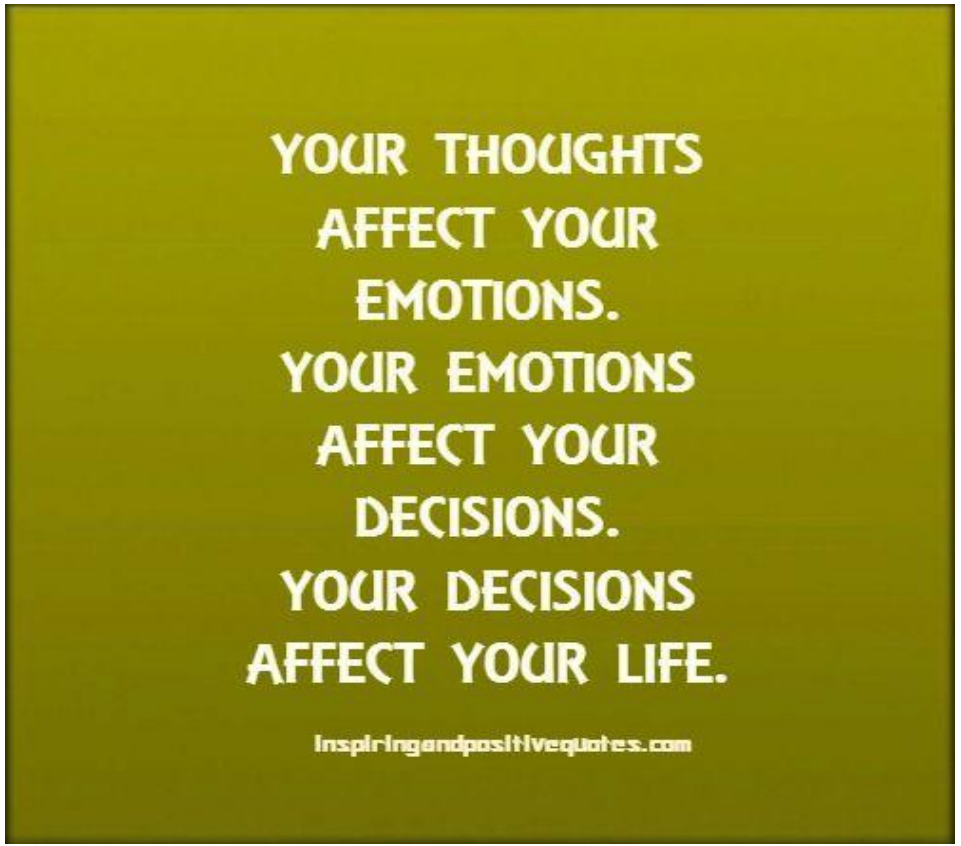

LIBO.RU


Mirror Neurons
www.thoughtco.com

https://www.youtube.com/watch?v=L49VXZwfup8


"As our feelings change, this mixture of peptides travels throughout your body and your brain. And they're literally changing the chemistry of every cel in your body."
- Dr. Candace Pert
www.6seconds.org

Make A Choice….



“Change your Personality and You Change Your personal Reality”Dr. Joe Dispenza

How?

- Bring awareness to a negative repetitive behaviour and/or thought
- Make a conscious decision to change
- Create a new thought and attach a positive emotion to replace the old one
- Catch yourself and chose to change whenever you repeat your old pattern by using your new thought and positive emotion
- Practicing in a state of calm, like in meditation, will promote receptivity to change
- Your mind is more comfortable with the familiar, your will has to be stronger than your mind
- Make it fun, a game you play with yourself
- Repetition, repetition, repetition……

Tips

- When you begin to fire a new thought, remember there are networks of neurons that are wired together from years of practice that you are working to overcome. Be patient with yourself.
- Persistence, especially when you feel resistance
- Be inspired by mirror neurons
- Fake it til you make it
- Practice daily Even better, several times a day
- Make it fun
- Laugh at yourself

What Would it Feel Like to be Triumphant?


express
your
gratitude

It really works…….

Resources:

- Bruce Lipton, MD:
  - *The Biology Of Belief*
- Annie Hopper: https://retrainingthebrain.com
- Dr. Joe Dispenza: https://drjoedispenza.com
  - *Becoming Supernatural*
  - *Breaking The Habit Of being Yourself*
- Norman Doidge, MD
  - *The Brain That Changes Itself*
  - *The Brain's Way of Healing*
- Candace Pert, Ph.D.
  - *Molecules of Emotions*
- Rick Hanson, Ph.D.
  - *Hardwiring Happiness*
- The 5 Minute Journal: https://www.intelligentchange.com/