



DR. HYMAN+

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Functional Medicine Deep Dive

July 2021

Trauma- the impact on physical health

Featuring: Dr. Mary Pardee

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modrn

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Specialties

Integrative Gut health
Mental health and cognitive performance
Metabolism

Other Credit:

Dr. Omid Naim, Hope Integrative Psychiatry



Mental Health Epidemic

- 1 in 6 adults uses a psychiatric drug
 - 1 Billion people in the world
- One in four Americans will experience a significant mental illness in their lifetime.
- The problem: We are treating mental health from a - name it, blame it, tame it approach. (Diagnose the person with anxiety, blame their biochemistry, and treat them with an anti-anxiety medication)
- The solution: mental health is established when a person is able to feel whole, certain human requirements need to be met to accomplish this and when these are not met chronic illness can arise.
 - We need to focus on wellness promotion vs symptom management

What actually is health?

- Physical health is the ability to self regulate
 - Our relationships, environment, choices and actions determine our ability to self regulate
- Physical health is not the absence of disease but a state of vitality and health that we can create from.
- When we go to the doctor we need to start asking - are you thriving, vs are you “sick” or “not sick”
- Health is a sense of purpose, feeling of belonging and essence that you are living authentically.

What is trauma?

- Trauma is when our ability to respond to a perceived threat is overwhelmed.
- Trauma is about becoming disconnected from our bodies, community, family and to ourselves.
- The same event may be traumatic for one person but not another depending on the person, their community/support, the coping tools they have acquired, how they respond, and the meaning they assign it.

Trauma is a part of the human experience

- **Humans are designed to experience hard/painful things.**
- Stress is a part of being human, it makes us more resilient, stronger and more compassionate.
- Trauma is essential to the human experience.
- Without grief, we are not human. We need to feel
- If we have the **components** needed to feel whole then we can move through traumatic experiences and become more resilient from it. If we do not have these essentials then we can get stuck in trauma feeling paralyzed/frozen or even develop PTSD, anxiety, depression, addictions, fatigue syndromes, or other chronic diseases.
- Trauma does not need to lead to chronic disease. And if it does, we can heal fully if we restore these foundational needs of all humans and become whole again.

Common Traumas

- Divorce
- Emotional abuse/ neglect
- Physical abuse
- Death of loved one
- Accidents- car accidents etc
- Sexual abuse
- Stress caused by poverty
- Bullying/Cyber bullying

Childhood Adversity and Adult Chronic Disease

An Update from Ten States and the District of Columbia, 2010

Leah K. Gilbert, MD, MSPH, Matthew J. Breiding, PhD, Melissa T. Merrick, PhD,
William W. Thompson, PhD, Derek C. Ford, PhD, Satvinder S. Dhingra, MPH, Sharyn E. Parks, PhD

- “Adverse childhood experiences (ACEs), including exposure to abuse and household dysfunction, are associated with **leading causes of adult morbidity and mortality and premature death**”
- 3 or more ACEs: 59% increase in the risk for diabetes
- **ACE 1-3: 2x risk for mental distress, 1.3x risk for heart attack.**
 - With each addition of an ACE- risk of diabetes increases 11%
- **ACE 7-9: 3.5x risk for fair/poor general health, 1.9x risk for heart attack, 3.8X risk for coronary heart disease , 2x risk stroke , 2.4x risk asthma, 4.7x risk for disability, 6x risk for mental distress**

What is the trauma- physical health connection?

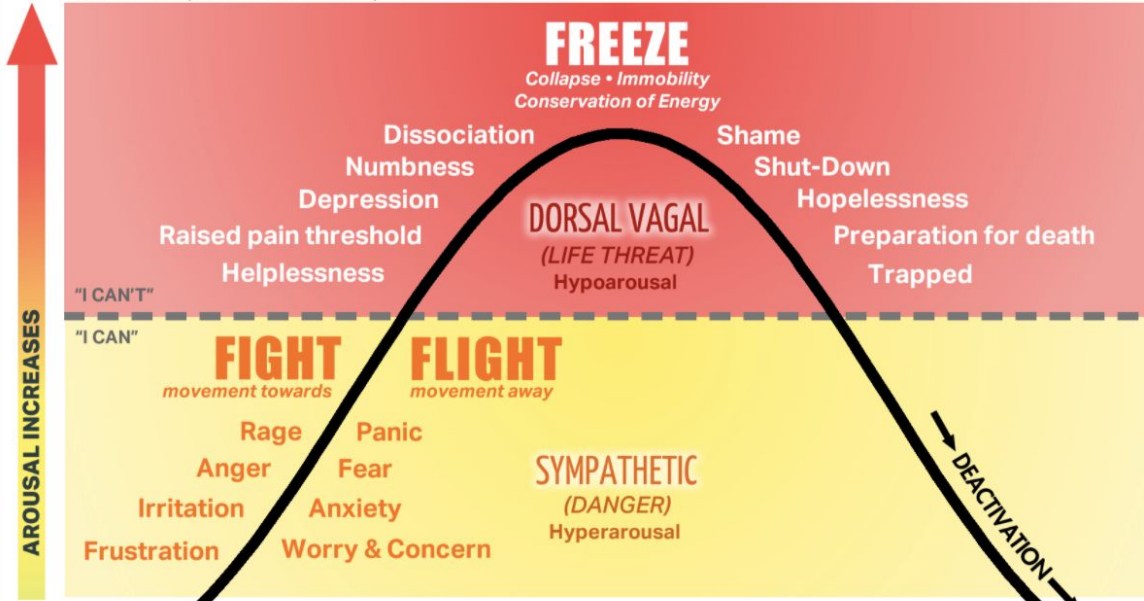
Lifestyle factors that increase risk for chronic disease:

Those with ACE score ≥ 4 : are:

- 1.25x more likely to be physically inactive
- 1.39x more likely to be overweight/obese
- 2.82x more likely to smoke
- 4.36x more likely to have “low life satisfaction”
- 5.62x more likely to use illicit drugs
- 5.84x more likely to have problematic alcohol use
- 7.51x more likely to be a victim of violence
- 10.22x more likely to have problematic drug use
- 30.14x more likely for suicid attempt

POLYVAGAL CHART

The nervous system with a neuroception of threat:



PARASYMPATHETIC NERVOUS SYSTEM

DORSAL VAGAL COMPLEX

Increases

Fuel storage & insulin activity • Immobilization behavior (with fear)
Endorphins that help numb and raise the pain threshold
Conservation of metabolic resources

Decreases

Heart Rate • Blood Pressure • Temperature • Muscle Tone
Facial Expressions & Eye Contact • Depth of Breath • Social Behavior
Attunement to Human Voice • Sexual Responses • Immune Response

SYMPATHETIC NERVOUS SYSTEM

Increases

Blood Pressure • Heart Rate • Fuel Availability • Adrenaline
Oxygen Circulation to Vital Organs • Blood Clotting • Pupil Size
Dilation of Bronchi • Defensive Responses

Decreases

Fuel Storage • Insulin Activity • Digestion • Salivation
Relational Ability • Immune Response

The nervous system with a neuroception of safety:



PARASYMPATHETIC NERVOUS SYSTEM

VENTRAL VAGAL COMPLEX

Increases

Digestion • Intestinal Motility • Resistance to Infection
Immune Response • Rest and Recuperation • Health & Vitality
Circulation to non-vital organs (skin, extremities)
Oxytocin (neuromodulator involved in social bonds that allows immobility without fear) • Ability to Relate and Connect
Movement in eyes and head turning • Prosody in voice • Breath

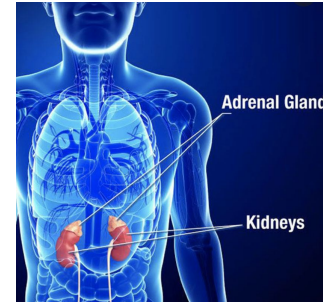
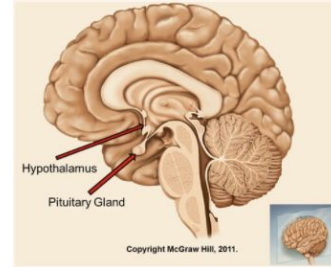
Decreases

Defensive Responses

How trauma affects body- short term

Thalamus in brain senses threat- triggers sympathetic response:

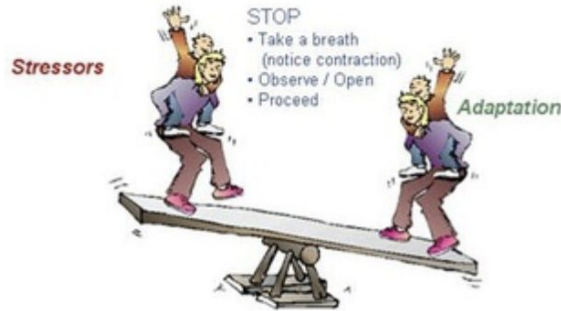
- Hypothalamus releases CRH-
 - increases attention and arousal
 - decreases appetite, sexual drive, growth
 - Startle response
- Adrenals release- cortisol- increase blood sugar levels
- Epinephrine/norepinephrine released-
 - Increased metabolic rate
 - Increased Heart Rate
 - Increased blood pressure
 - Pupils widen
 - Bronchioles dilate- increased breathing rate
 - Platelet aggregation
 - DECREASED Gut function (non-essential)
 - DECREASED urine output
- After stressor goes away body SHOULD increase parasympathetic tone and return to normal - back to homeostasis



The body is always looking for homeostasis

Allostasis- process in which the body responds to stressors in order to return to homeostasis

Stress Response:



Allostasis

Some stress can be energizing and toning to the system. Body systems adjust well to stressors without over taxing resources.

Stress Reaction:



Allostatic Load

Body systems achieve a kind of balance, but everything is working too hard and we begin to slowly break down.

How trauma affects body- chronic stress response (allostatic load)

Thalamus in brain senses threat- triggers sympathetic response:

- Body rises to balls of feet and hunches forward w/ normal stress response to ready to flee-
 - CHRONIC- Tension in muscles and joint (fibromyalgia, joint pain/ muscle pain/ headaches etc)
- Adrenals release- cortisol- increase blood sugar levels
 - Long term cortisol- memory damage in hippocampus
 - Lowers motivation
 - In amygdala- increase fear/startle
 - Early life stress/ trauma has been associated with both
 - Both -chronically elevated cortisol and cortisol resistance
 - lower cortisol levels that can make stress more difficult to deal with since cortisol helps us
 - Both too much and too little cortisol can results in increased risk for:
 - Cardiovascular, metabolic and psychological diseases
 - Cortisol dysregulation may also promote cancer cell growth/migration

How trauma affects body- chronic stress response (allostatic load)

- Lower urinary 24 hr cortisol levels have been seen in those with PTSD
 - This has been seen in: Vietnam veterans with PTSD (Boscarino, 1996), sexually abused women with PTSD (Stein et al., 1997a), and children exposed to the Armenian earthquake with PTSD (Goenjian et al., 1996).
 - Lower cortisol also observed in Holocaust survivors with PTSD
- We need **BALANCED** cortisol levels- cortisol is not bad

How trauma affects physical health

- Epinephrine/norepinephrine released
 - Autonomic dysregulation in response to chronic stress/trauma - allostatic load
 - stress-related diseases:
 - heart disease, obesity, type 2 diabetes, cancers, and psychopathologies - Alkon and colleagues
 - Impaired social interactions/relationships
 - Platelet aggregation- CVD risk increases
 - DECREASED Gut function (non-essential)
 - IBS/SIBO/ REFLUX
 - DECREASED urine output- Retention- increased blood pressure (HYPERTENSION)

How trauma affects physical health

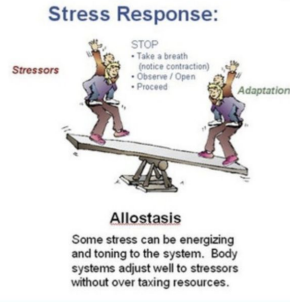
- Alterations in immune function- autoimmunity etc
 - Inflammation from chronic stress/trauma- can cause immunosuppression- impaired mucosal immunity in kids
 - Worse response to viral infections in teens
 - **Harsh Family Climate in Early Life Presages the Emergence of a Proinflammatory Phenotype in Adolescence**
Gregory E. Miller, Edith Chen
First Published April 29, 2010 | Research Article | [Find in PubMed](#)
- Epigenetic changes: hypermethylation in stressed rats (not receiving enough maternal care) caused silencing of cortisol receptor related genes.
 - Epigenetic changes have been found

Trauma leading to metabolic dysfunction

- Not well understood but hypothesized that increase inflammation and high cortisol are contributing factors.
- People with more ACEs are more likely to be inactive as well.

Trauma does not have to result in health issues

Allostasis



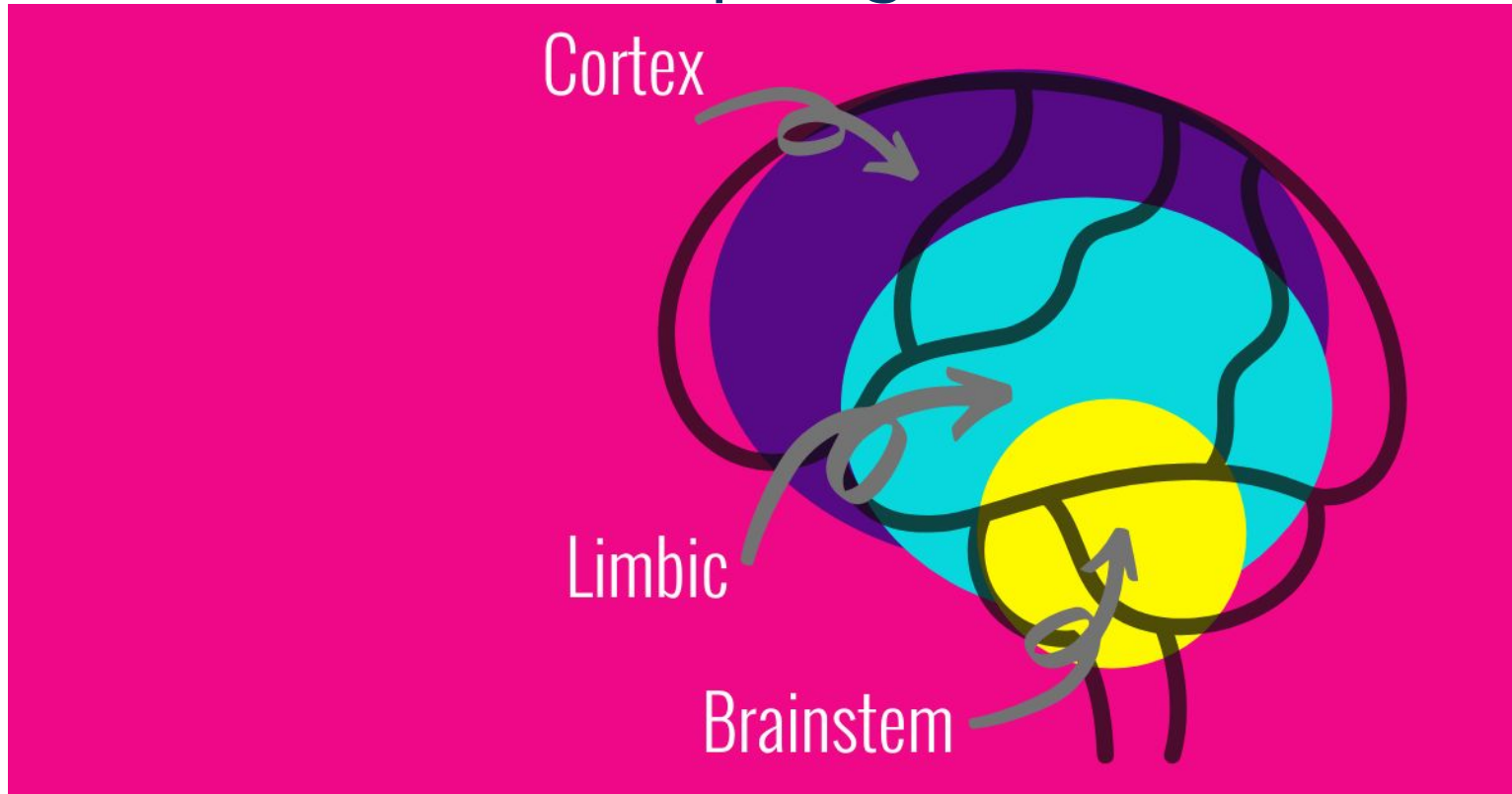
- 90% of people experience trauma in their lifetime, according to a 2013 study.
 - Trauma is not the issue, it is how we cope with it that makes a difference.
- In PTSD- Thalamus in brain is dysregulated, your body can't decide if the stressor is still there or if it is in the past.
 - Chronic Stress response

Not all people with high ACE score go on to have adverse health outcomes

- Remember- people with 3 or more ACEs have 53% increased risk of diabetes. But why not 100% increased risk? Something is going on with the people who do not get diabetes, do not become obese, are not affected by mental health later in life despite experiencing a known trauma

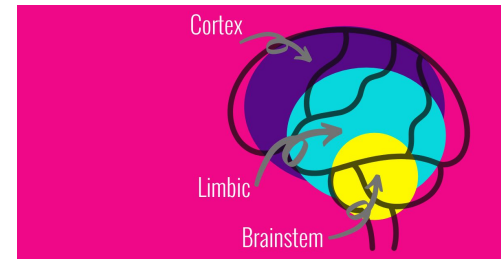
How do humans “shake it off” like other animals?

Bottom Up Regulation



Preventing adverse effects of trauma/ healing from trauma

- Human needs
 - Bonding- Community (limbin brain)
 - Ability to self-regulate- brain stem (brain stem)
 - Nature
 - Feel a sense of meaning/purpose (cortex)
 - Story has meaning
 - We feel our life has meaning- we are in service of others//greater good
 - Authenticity



Preventing adverse effects of trauma/ healing from trauma

Preventing adverse effects of trauma by promoting resilience

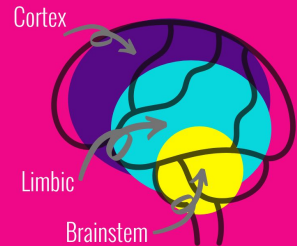
Community, belonging, relationships:

- “A lack of social support and recognition by the environment is one of the most consistent risk factors for posttraumatic stress disorder (PTSD), and PTSD patients will recover faster with proper social support.”
- In order to feel safe we need to feel like we can rely on others and are not in this alone
- We need a tribe to co-regulate with.
- Oxytocin - intranasal has been used to treat PTSD



How to promote resilience cnt

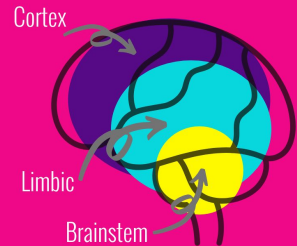
- Self regulation- teach the body how to feel safe again
 - Somatic therapy/ experience
 - Exercise
 - Daily practice/ routine
 - Meditation/breathwork
 - Mindfulness
 - Yoga
 - Walking
 - Nutrition- diet
 - Nature- safe, grounding



How to promote resilience cnt

Consciousness- rewiring the cortex

- Psychedelics- psilocybin, ketamine, MDMA assisted psychotherapy
 - Disrupt the default mode network
 - Help assign meaning to our life story
- Uncovering the authentic self- integrative psychotherapy
 - Re clarifying values
 - Understanding our life story. What meaning have we assigned to it to feel a sense of purpose



MDMA-assisted therapy for severe PTSD: a randomized, double-blind, placebo-controlled phase 3 study

Jennifer M. Mitchell , Michael Bogenschutz, [...]Rick Doblin

- 14 of 42 participants in the MDMA group (33%) and 2 of 37 participants in the placebo group (5%) met the criteria for remission after **three** sessions
- At the primary study endpoint (18 weeks after baseline), 28 of 42 (67%) of the participants in the MDMA group no longer met the diagnostic criteria for PTSD, compared with 12 of 37 (32%) of those in the placebo group after three sessions.

The most practical lesson crisis teaches us is to not wait for a crisis in order to be prepared.

-Dr. Omid Naim

THANK YOU!



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