

# How Stress Makes You A Terrible Person and Why You Should Laugh About it

Matthew Wappett Ph.D.



Emma Eccles Jones College of Education & Human Services  
**Institute for Disability Research, Policy & Practice**  
**UtahState**University.

# Introduction

- Executive Director, USU Institute for Disability Research, Policy & Practice
- Clinical Associate Professor in Special Education and Rehabilitation in the Emma Eccles Jones College of Education and Human Services
- Post-doctoral training in Mind/Body Medicine at Harvard Medical School
- Research/Training Interests: Disability Policy, Educational and Social Inclusion, Effects of Chronic Stress on Learning and Social Functioning





# Introduction Pt. 2

Principal Investigator on the Mental Health and Developmental Disabilities National Training Center.

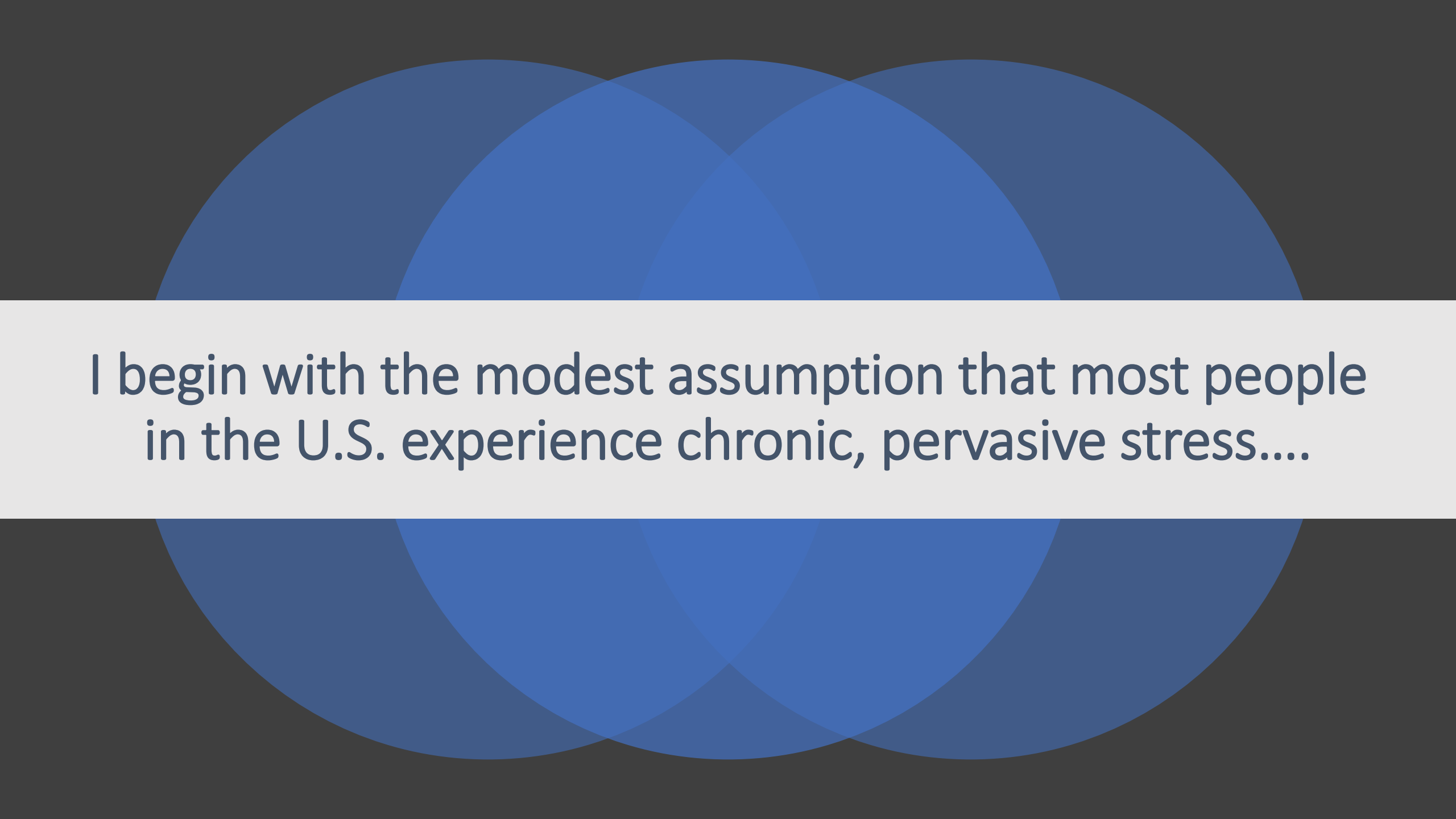
Board Member of the Mental Health and Intellectual and Developmental Disabilities National Research Consortium at Johns Hopkins Medical School

Member of the White House Task Force on Mental Health, Homelessness, and Substance Abuse







The background features three overlapping circles in a medium blue color, arranged horizontally. The circles overlap in the center, creating a darker blue area. The circles are positioned such that they appear to be behind a white horizontal band that contains the text.

I begin with the modest assumption that most people  
in the U.S. experience chronic, pervasive stress....



**I'm so stressed out over being stressed out that I can't remember why I'm stressed out...and that's stressing me out!**



# 2021 Stress Statistics

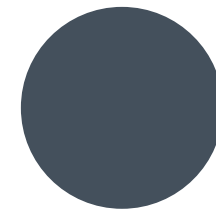
- **The Gallup Global Emotions Report, surveyed 160,000 people in 116 countries during 2020 and early 2021. Their findings show that 2020 “officially became the most stressful year in recent history.”**
  - Nearly 190 million people experienced significantly higher stress in 2020 than in past years.
  - In 2020, the world was a sadder, angrier, more worried and more stressed-out place than it has been at any time in the past 15 years.
  - 57% of U.S. and Canadian workers reported feeling stress on a daily basis, up by eight percentage points from 2020 and compared with 43% of workers who feel that way globally.
- **The American Psychological Association (APA) conducts their Stress in America survey annually. In 2021:**
  - 84% of adults reported feeling at least one emotion associated with prolonged stress . The most common were feelings of anxiety (47%), sadness (44%) and anger (39%).
  - Nearly half of parents (48%) said the level of stress in their life has increased compared with before the pandemic.

*“We just weren’t built to maintain this level of stress and hypervigilance and hyperarousal for this length of time... we are almost at a breaking point with so many stressors, with many of them out of our control.”*

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**~C. Vaile Wright Ph.D.**

**APA Senior Director of Healthcare Innovation**







**Stress is like a Big  
Mac...**



**But what is  
stress?**







# The Stress Response

The stress response is also known as the “fight or flight” response (Selye, 1963).

OH,  
SSSHHHHHIIIIII...



During a stress response the heart starts pumping blood more quickly...this helps get oxygen to muscles and the brain so the animal can properly react to physical danger...like a killer hippo!



*Pictured: The proper response to a killer hippo*

You experience the **EXACT SAME** stress response by simply being late for work, forgetting a deadline, arguing with a colleague or by getting yelled at by your boss....to your body it's all the same!



**To your body, a stressful work environment is basically no different than fighting off a lion or tiger or bear for 40 hours a week...or more!**



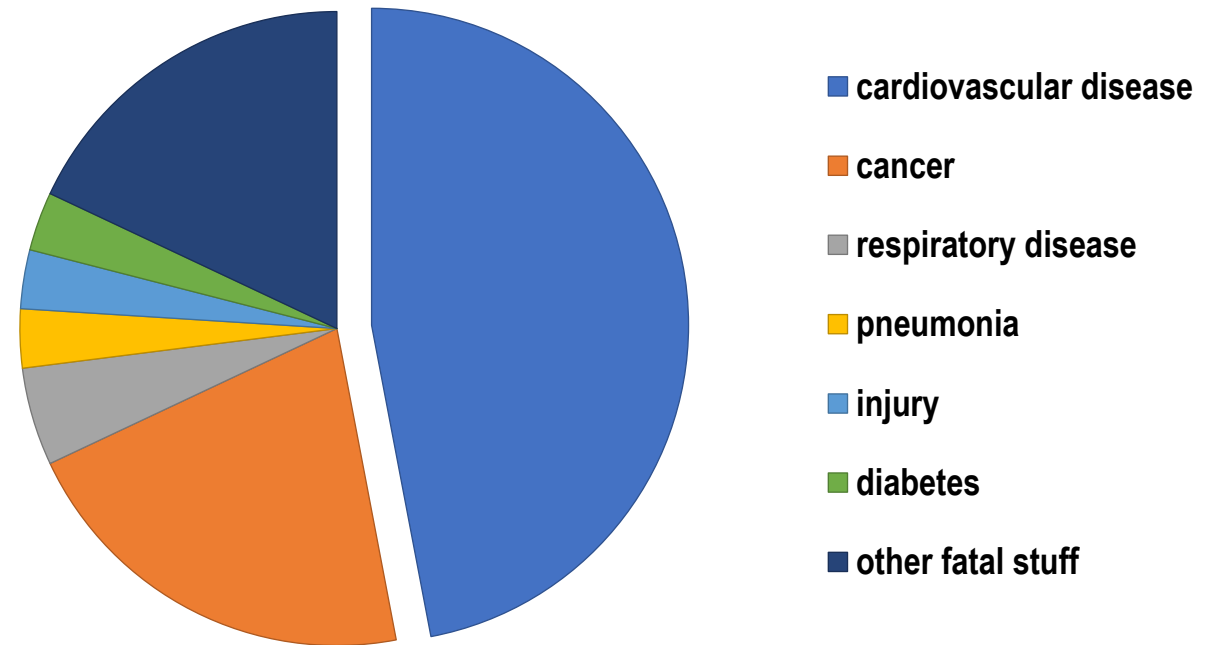


**Having a constantly elevated heart rate for long periods of time greatly increases your chance of having a heart attack or stroke.**

**Cardiovascular disease is the leading cause of death in the WEIRD\* world.**

**\*WEIRD = Western, educated, industrialized, rich, democratic**

## **Pie Chart of Death**



**If the stress response is prolonged beyond just a few minutes, the body starts to shut down nonessential processes such as growth, reproduction, and digestion.**

**This ensures that all available energy can be used for:**

- a) Running for its life**
- b) Opening a can of whoop-ass**



I TOLD YOU I WAS SICK

B. P. ROBERTS

MAY 17, 1929

JUNE 18, 1979

**In order to provide you with a sustained surge of energy, one of the “nonessential” functions that your body shuts down is your immune system.**

**Over time this can lead to some generally unfavorable consequences...**



# Your Poor Telomeres...

- The telomeres of people who experience chronic stress are almost 45-50% shorter than typical, healthy telomeres.
- Once the telomere is gone, the DNA begins to fray and cannot be used to pass along genetic information.
- This ultimately contributes to aging and the manifestation of genetically-correlated diseases.



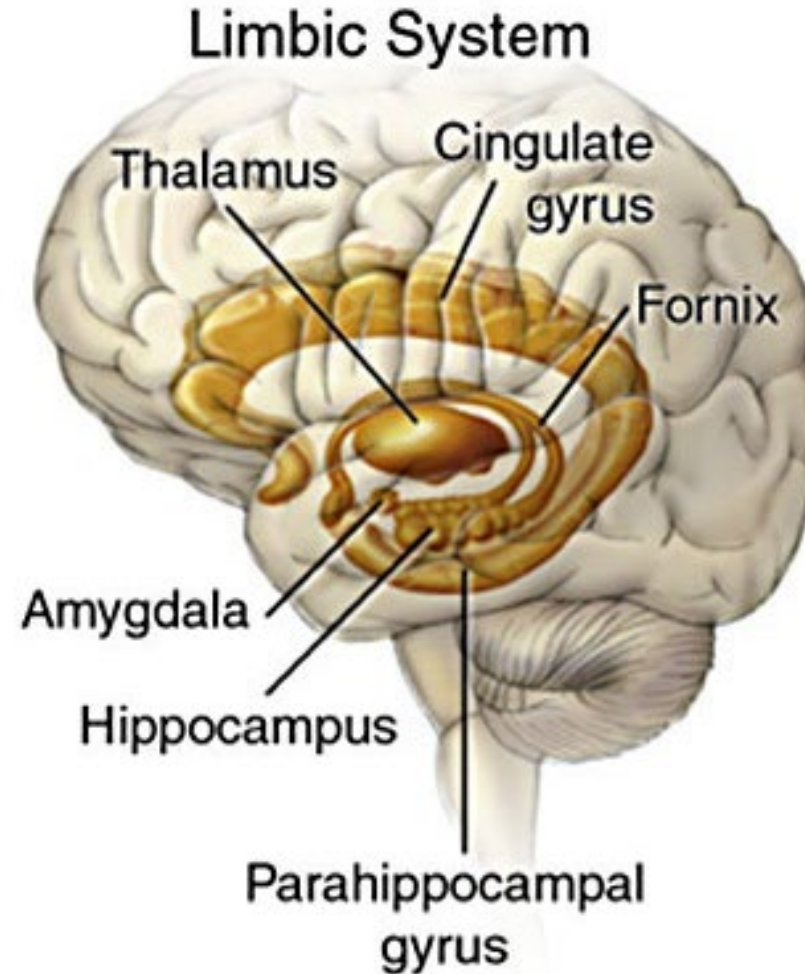
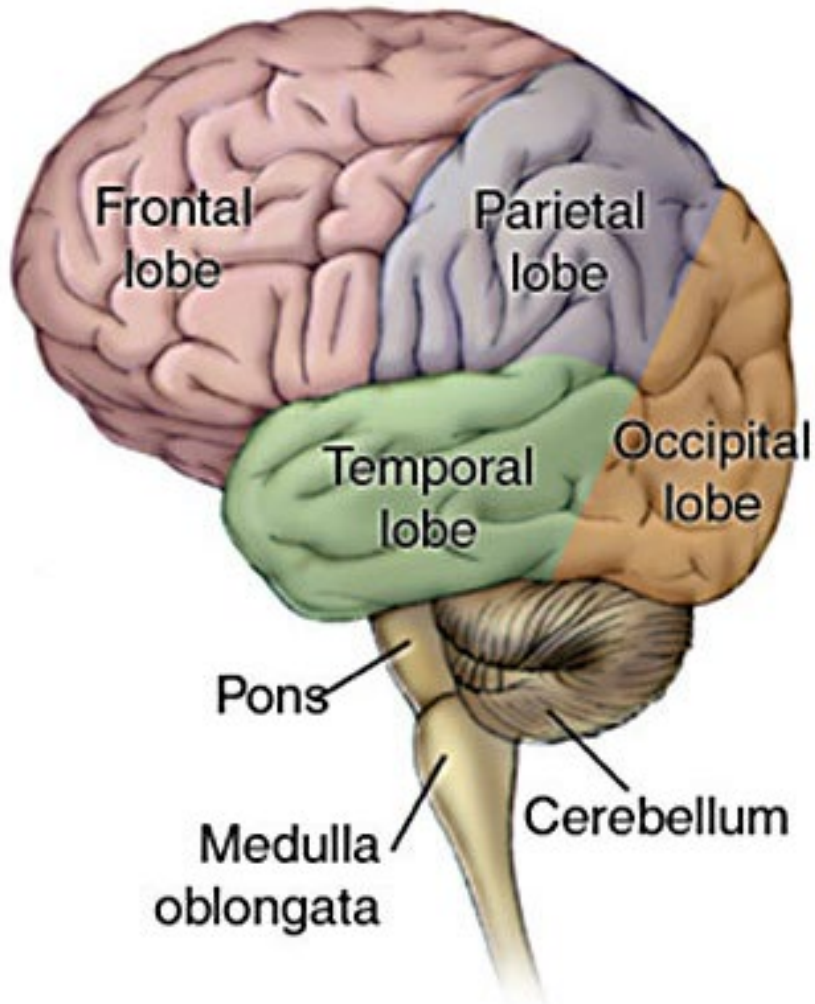


**But what about my brain  
Dr. Wappett?**

**What happens to my brain  
when I'm stressed?**



# “Upper” vs. “Lower” Brain Structures





The hormones released when we are stressed temporarily rewire our brain, so we are focused on our individual survival...

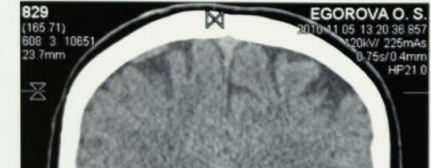
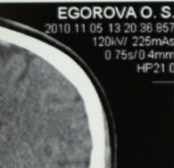
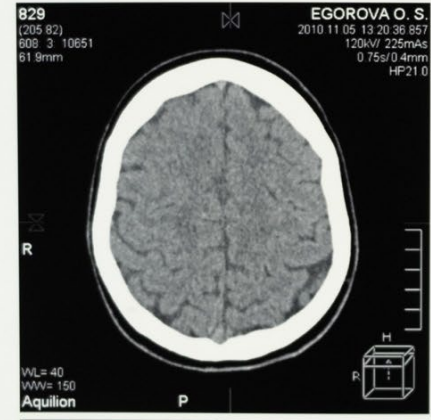
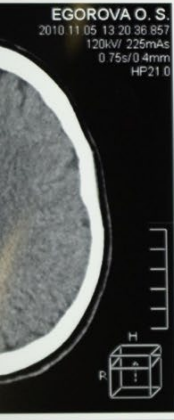
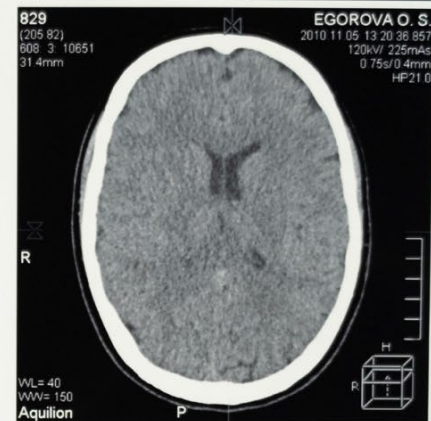
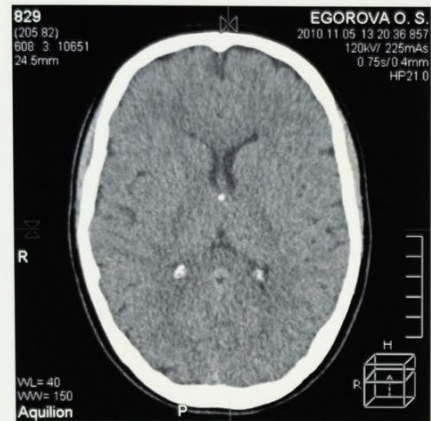
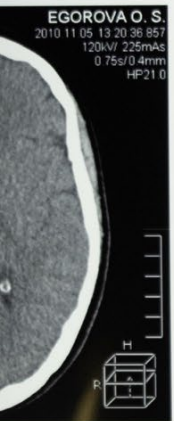
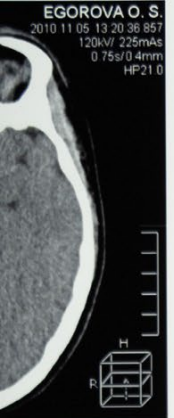
**SELFISH PEOPLE**



**SELFISH PEOPLE  
EVERYWHERE**



**Stress hormones move our thinking to the amygdala and limbic system...your lower brain...the connection to your higher brain functions is severed!**



Chronic stress in children is referred to as “toxic stress” because it leads to the stress response system being permanently set to “on”. Stress hormones cause neurons to shrink & die.

Children with who experience toxic stress have fewer and weaker neural connections than healthy, unstressed children!

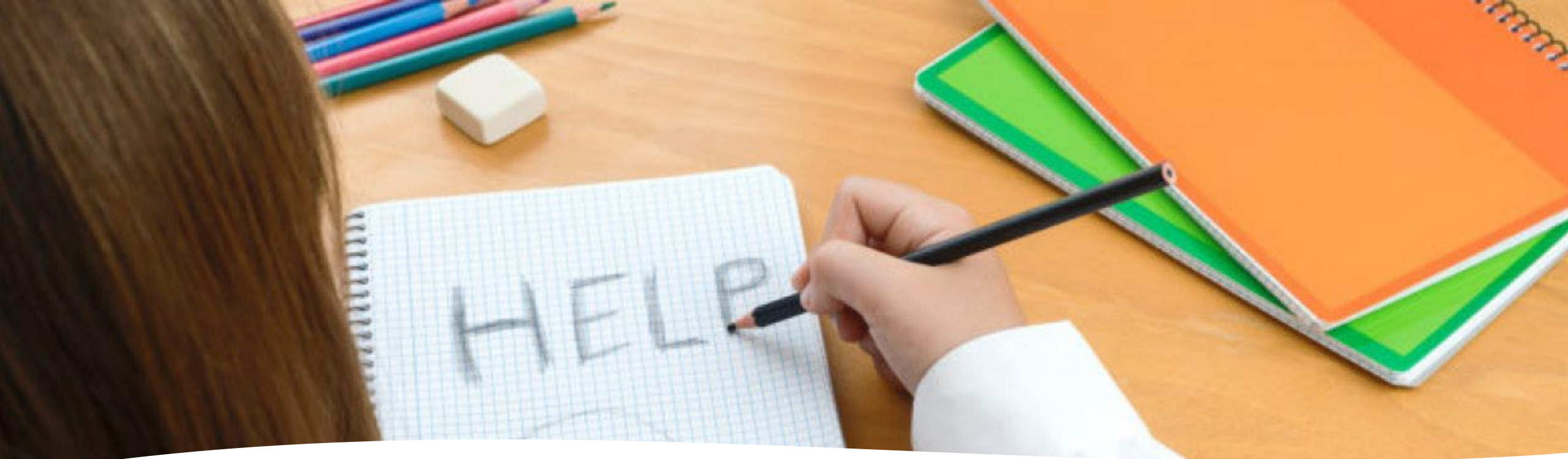
(Harvard Children’s Center, 2007)



# Stress & Mental Health

- When stress becomes overwhelming and prolonged, the risks for mental health problems and medical problems increase exponentially.
- Long-term stress increases the risk of mental health problems such as anxiety, depression, substance abuse, sleep problems, chronic pain, headaches, gastrointestinal problems, a weakened immune system, difficulty conceiving, high blood pressure, cardiovascular disease, stroke, and many more!
- Unfortunately, our society has relegated mental health to an afterthought! It's something we pay attention to when we have to...until it's too late.





# Mental Health in Schools

- In 2018 suicide became the second leading cause of death for children ages 10 to 24, according to the American Academy of Pediatrics.
- A poll conducted by the University of Michigan found that over 50% of students are experiencing new or worsening mental health conditions since the pandemic began.
- The American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association issued a joint statement in October 2021 declaring [a national emergency in child and adolescent mental health](#).



# U.S. Surgeon General Vivek Murthy (12/07/2021)

*“Mental health challenges in children, adolescents, and young adults are real and widespread. Even before the pandemic, an alarming number of young people struggled with feelings of helplessness, depression, and thoughts of suicide — and rates have increased over the past decade....The COVID-19 pandemic further altered their experiences at home, school, and in the community, and the effect on their mental health has been devastating. The future wellbeing of our country depends on how we support and invest in the next generation.”*







**If you choose to ignore stress and mental health, it will eventually force you to pay attention to it!**



If our bodies have a stress response

AND

If our bodies are subject to the laws of nature / physics

THEN

there must needs be an equal and opposite response....

**The Relaxation Response (Benson, 1975)**

# The Relaxatio n Response

## Two basic steps:

The repetition of a word, sound, thought, phrase, or muscular activity.

The passive return to the repetition when other thoughts intrude.



This exercise breaks the train of everyday thought (conscious & unconscious) and allows the body to shut off its stress response mechanisms.



A woman with blonde hair tied up, wearing a white long-sleeved shirt and dark pants, is sitting in a meditative lotus position on a grassy lawn. She is seen from behind, with her hands resting on her knees in a mudra. The background is a lush green park with trees and sunlight filtering through the leaves.

## What happens during the Relaxation Response?

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- Heart rate decreases
- Blood pressure decreases
- Respiratory rate decreases
- Oxygen consumption decreases
- Muscle tension decreases
- Slow brain waves increase
- Lowered perception of stress
- Decrease in reactivity

So, what  
about  
laughter?



# Why Laughter?

*“The arguments in favor of laughter as an intervention are grounded in the virtually universal positive results associated with existing studies of laughter” (Strean, 2009).*





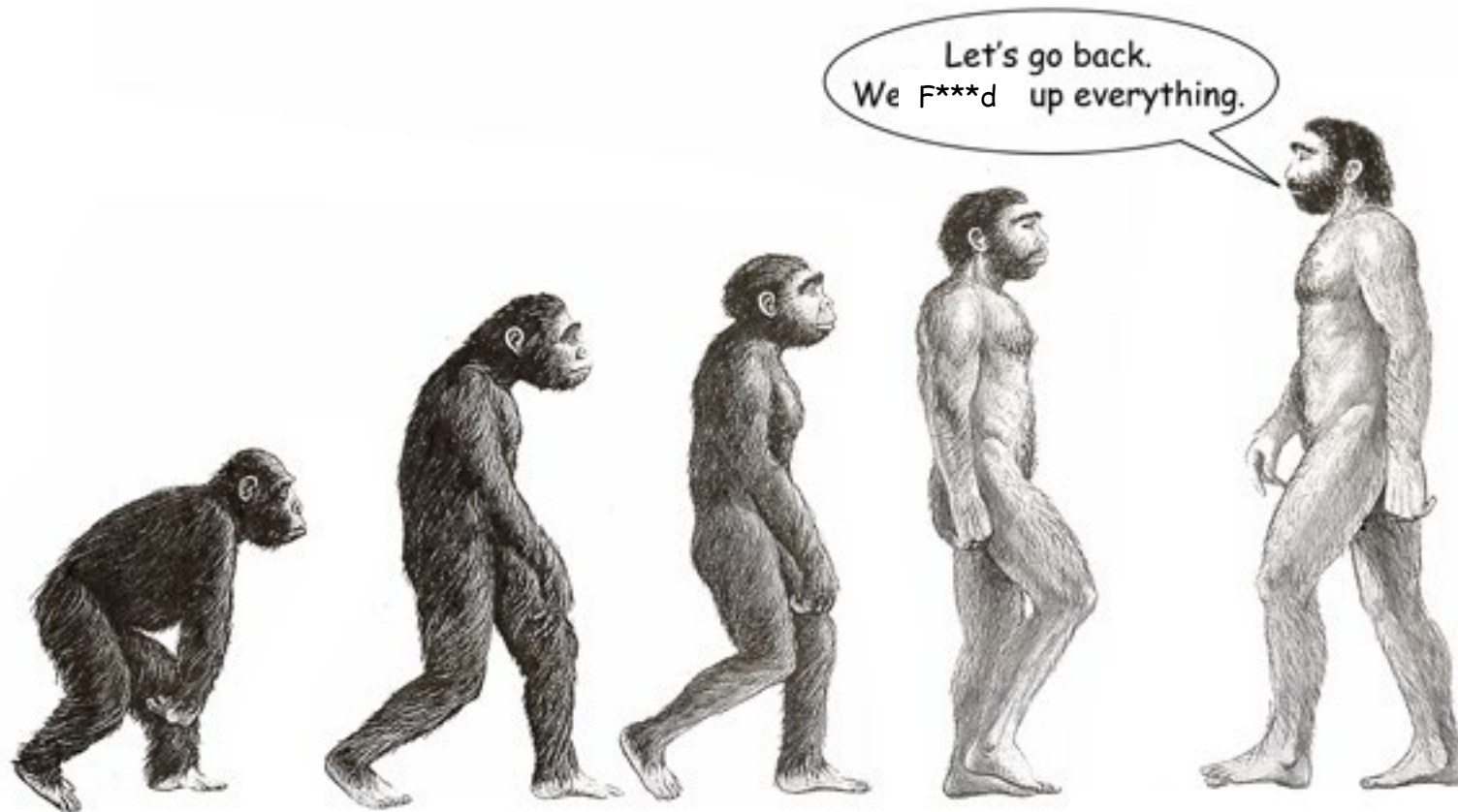
# What is Laughter?

It is hypothesized that laughter is an evolved form of playful “chuffing” and signals social acceptance or belonging; laughter may also have been used to communicate relief or that a danger to the social group has passed (Panskepp & Burgdorf, 2003; Simonet, Versteeg, & Storie, 2005; Davila-Ross, Allcock, Thomas, & Bard, 2011).



# The Evolutionary Origins of Laughter

- Researchers speculate that laughter may be important on an evolutionary level by helping people cooperate, maintain social bonds, and problem solve as a group (Marijuan & Navarro, 2010).
- "Laughter and singing and smiling tune the group emotionally...They get them on the same wavelength so they can work together more effectively as group" (Seligman quoted in Stein, 2008).





# Laughter Physiology

## Laughter promotes cardio-vascular health:

- Blood pressure drops and pulse rate drops after you have laughed (Pattillo & Itano, 2001).
- Blood vessels dilate and vessel walls become more “slippery” (Miller, Mangano, Park, Goel, Plotnick, & Vogel, 2005).
- Laughter releases nitric oxide in the endothelial walls of blood vessels which also helps reduce inflammation and makes platelets less “sticky” (Miller & Fry, 2009; Vlachopoulos, Xaplanteris, Alexopoulos, Aznaouridis, Vasiliadou, Baou, Stefanadi, & Stefanadis, 2009).

**Extended bouts of laughter (10-15 minutes) have been shown to have the same cardiovascular benefits as 30 minutes of aerobic activity (Godfrey, 2004; Sugawara, Tarumi, Tanaka, 2010)...plus its way more fun!**





# Laughter Physiology

- Laughter strengthens the immune system!
- Laughter increases lymphatic flow, which boosts the immune system with immediate increases in levels of anti-viral and anti-infection cells.
- Watching a one-hour comedy video has been found to produce:
  - increased number of B cells;
  - increased number of, and activation of, T cells;
  - increased number of Helper T cells (the cells attacked by HIV);
  - increased ratio of Helper/Suppressor T cells;
  - increased number of, and activity of Natural Killer (NK) cells;
  - increased levels of Interferon gamma.

(Berk, Tan, & Fry, 1989; Berk, Felten, & Tan, 2001; Bennett, Zeller, & Rosenberg, 2003)





# Laughter Physiology

- Laughter releases endorphins (“feel-good hormones”), self-manufactured natural opiates that create positive states of mind and boost optimism, self-confidence and feelings of self-worth (Azim, Mobbs, & Jo et al., 2005).
- Laughter decreases adrenaline & cortisol secretions (Dillon et al., 1985, Berk et al., 1988).





# Laughter Physiology

- Laughter has also been shown to promote attachment and bonding by causing our body to secrete oxytocin (Thompson, Callaghan, Hunt, et al. 2007; Lukas, Toth, Reber, et al. 2011).
- Laughter stimulates feelings of caring and forgiveness (Alexander, 1986; Panskepp, 2000)





**Laughter switches  
on the systems that  
stress shuts off!**



In the end...laughter is natural...we can't help but laugh!



# Introduction to Laughter

# Yoga







# Simple Laughter Exercises

- Check-in
- Calcutta Clapping
- Laughter Motors
- Fingertip Laughter
- Belly Drum
- Milkshake Laughter
- Lotus Breath
- Aloha Laughter
- To Do List Laughter
- Cell Phone Laughter
- Silent Laughter
- Laughter Meditation







” Dude, suckin' at something  
is the first step to being  
sorta good at something. ”





# Leading Change!

- Resilient students need resilient teachers. Good teaching requires modeling of skills, and attitudes. If teachers themselves are barely coping, if teachers cannot bounce back from the challenges they face, how are they to sustain the strength needed to promote resiliency among their students? (Wolpow and Askov, 2008)
- “You can’t teach what you don’t know; you can’t lead where you won’t go.” ~Malcolm X

# Thank You!

[wappett@usu.edu](mailto:wappett@usu.edu)

<https://www.tiktok.com/@matthewwappett>

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

