


The Neuroscience of Resilience in the Wake of the Pandemic

Dr. Jennifer Mervyn
Surrey School District Secondary Teachers
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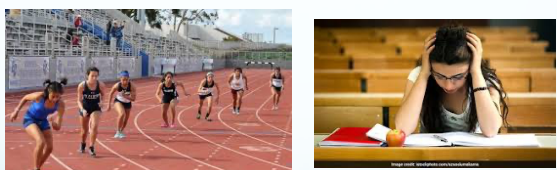
Toxic Stress= Trauma



- POSITIVE** Brief increases in heart rate, mild elevations in stress hormone levels.
- TOLERABLE** Serious, temporary stress responses, buffered by supportive relationships.
- TOXIC** Prolonged activation of stress response systems in the absence of protective relationships.


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Positive Stress



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Tolerable Stress



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Toxic Stress



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ACEs & COVID-19

Coronavirus pandemic could inflict emotional trauma and PTSD on an unprecedented scale, scientists warn

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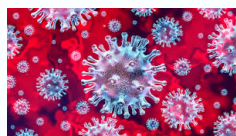
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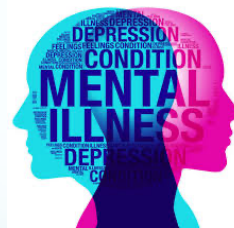


Increases in: Domestic violence
Mental Health Issues
Suicide
Substance Misuse
Isolation



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Flattening the “other” curve



US Research indicated that while mental health issues amongst children and caregivers initially increased, it began to flatten, except in more vulnerable populations

Resilience is built by supporting close family relationships, social connection within communities, and ensuring that every one has their basic needs met

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Toxic Stress=Trauma

Trauma is defined by:

1. The individual sensory system NOT a discrete event itself
2. Long term impact mentally, physically, emotionally and/or spiritually

(SAMSHA)



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Neuroplasticity

- Our brains have the most amazing propensity to heal and want to heal!!

“NEUROPLASTICITY PROVIDES US WITH A BRAIN THAT CAN ADAPT NOT ONLY TO CHANGES INFLICTED BY DAMAGE, BUT ALLOWS ADAPTATION TO ANY AND ALL EXPERIENCES AND CHANGES WE MAY ENCOUNTER...”



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Resilience



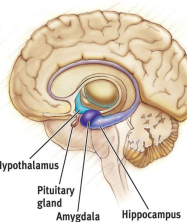
Even in the presence of trauma & adversity, positive experiences allow us to heal our brain

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Toxic Stress Change the Size/ Shape of our Brain

The Limbic System

- Hypothalamus, pituitary, amygdala, and hippocampus all deal with basic drives, emotions, and memory
- Hippocampus → Memory processing
- Amygdala → Aggression (fight) and fear (flight)
- Hypothalamus → Hunger, thirst, body temperature, pleasure, regulates pituitary gland (hormones)



1. FEAR/STRESS activate SNS -alerts the hypothalamus- alerts the pituitary gland which tells the adrenal gland (above kidney) to make stress chemicals

Stress hormones travel via the bloodstream and affect your entire body. In your brain, they inflame the amygdala (increasing the intensity of emotions (sadness, fear, and anger) and block the hippocampus from consolidating memory

If these chemicals continue for any length of time, the hippocampus shrinks and the amygdala enlarges.

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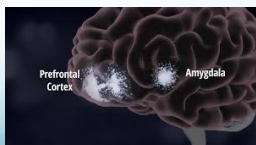
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SHRINKS the hippocampus!!

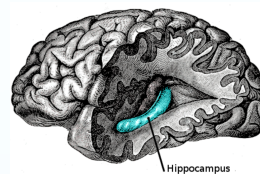
(responsible for processing emotion and memory and managing stress- and spatial memory enabling navigation)

MRI studies show less gray matter in the prefrontal cortex (decision-making and self-regulatory skills) and the amygdala (fear-processing center)



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Brain Impacts of Isolation



- 2019 study showed effects of extreme isolation on the brains of nine crew members who spent 14 months living on a remote research station in Antarctica
- Previous research identifies solitary confinement and sensory deprivation with mental health issues, and suggest social isolation may fundamentally change the structure of a person's brain.

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Loneliness Makes us think Crazy Thoughts

I am not likeable



I have no real friends

No body cares about me

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Brain Regions & Loneliness

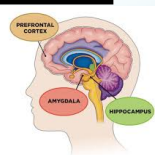
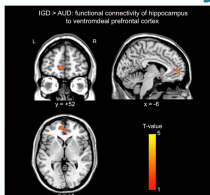


When we feel lonely or rejected, brain regions associated with distress and rumination are activated

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ACEs Weaken Neural Connections- Brain Connectivity

- ACEs weakens neural connections between the prefrontal cortex and the hippocampus
- weaker connections between the prefrontal cortex and the amygdala (girls)
- The prefrontal-cortex-amygdala connection plays an essential role in determining how emotionally reactive we're likely to be and how likely we are to perceive these events as stressful or dangerous



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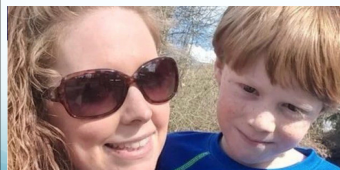
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B.C. Mom Pries Cougar's Jaws Open To Free 7-Year-Old Son During Backyard Attack

She jumped down the back steps and charged the animal, fighting to make it release her son's arm.

Canadian Press

04/04/2019 02:20pm EDT

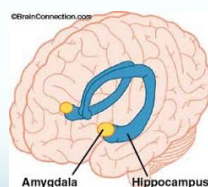
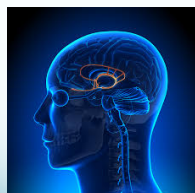


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Amygdala

Perceives emotions such as anger, fear, and sadness, & controls aggression

Helps store memories of events and emotions so that we can recognize similar events in the future

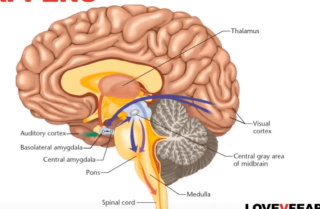


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Stress Affects the Way We Process Information

HOW AMYGDALA HIJACKING HAPPENS

- The stimuli goes directly to thalamus and it then goes right to amygdala before a signal reaches the neocortex to process.
- This survival mechanism lets us react to things before the rational brain has time to mull things over.



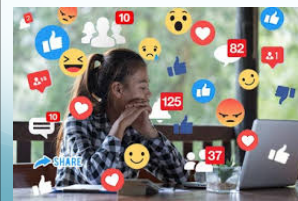
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Adaptive vs Disruptive



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Kids don't go from 0-100 – they're already revving high



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How are you fostering resilience in yourself?



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Disengage the stress response & activate Resilience



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Strengthening our "resilience muscle" starts with awareness. What am I noticing in my body, thoughts, emotions, and behaviors? Am I inside or outside of my *resilience zone*? When I read a headline or hear some news and the words are upsetting, what is my reaction? Do I stockpile toilet paper or do I think about ways I can continue to connect with others or support those who are more vulnerable during a time when physical distancing is a necessary intervention? That balance will be the difference between succumbing to the frenzy and chaos and moving through this pandemic with resilience.

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Address your anxiety!



If you are an anxious teacher/administrator- addressing your own feelings is the first step towards helping youth manage their own worries

Youth are emotional sponges. When they sense that we are okay, they begin to relax too

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The Power of a Non-Anxious Adult: Modelling Stress & Anxiety Management



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Our students' resilience can be supported by our personal resilience efforts



Reduce manageable stressors: when adults are less stressed, children are less stressed

How are we reducing our manageable stressors??

Mr. Rudd- daily runs ***
Play! scooters

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Validate feelings/concerns

Even if the situation doesn't seem that bad to you, it's how the youth feels that matters

- Try not to judge – it's how the youth feels about the stress is what matters most
- “We have to remember it's the perception of the youth ... the situation is something they have no control over, feeling that their life or safety is at risk”
- It may not even be just one event, but the culmination of chronic stress—i.e. poverty



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Sharing Negative Emotions



Holding our feelings in, and suppressing negative emotions, makes things worse—can contribute to toxic stress.

Expressing, accepting, tolerating, managing and sharing negative emotions bolsters resilience.

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Experiencing Positive Emotions



Experiencing positive emotions such as compassion, forgiveness, gratitude, love, awe, humor, a sense of purpose

Changes the structure and function of the brain and the nature of social relationships

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Physical Fitness

Take care of my body

Exercise regularly

Get quality sleep

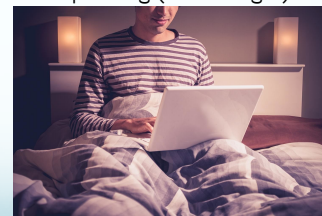
Eat healthy

Avoid mood-altering drugs or over-use of alcohol

Use healthy coping procedures—engage nature

Scientists: Explaining the cons of watching TV too late

Me: Watching him explaining (late at night)



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Interpersonal Fitness

Recognize that everyone is impacted (universal suffering)

Connect with social supports

Lean on others and seek and accept help
Give back and help others. Share my “islands of competence” with others

Be creative & get social

Nurture my relationship with my partner

Use my cultural or ethnic traditions, rituals and identity as a support aide

Use pets to maintain and develop relationships and as a way to manage moods



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Emotional Fitness

Ways to Increase Positive Emotions

Cultivate positive emotions (use hobbies and pleasurable activities)

Make a “bucket list” of emotional uplifting activities and then just do it!

Use positive humor

Express gratitude



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Emotional Fitness

Ways to Regulate Negative Emotions

Use "opposite actions" to cope with intense emotions.

Give myself permission to experience and share emotions (feel sad, cry, grieve, become angry)

Handle and overcome my "emotional pain" that comes with feelings of being disconnected

Journal—use "writing cure."

Use creative and expressive activities to work through my feelings.

Enjoy the benefits of self-disclosure.

Change my self-talk.

Engage in non-negative thinking and become more stress-hardy



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Thinking Fitness

Be psychologically flexible

Use constructive thinking and consider alternative solutions/pathways

Establish achievable goals

Establish realistic expectations

Use hope to achieve goals

Be realistically optimistic and goal-directed

Bolster a sense of self-confidence and self-efficacy

Engage in benefit-finding ("Search for the silver lining")



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Thinking Fitness

Engage in altruistic (helping) behaviors

Be mindful, "mentalize" and stay in the present

Associate with people who share my positive values

Avoid debilitating guilt and shame reactions

Avoid worry & "thinking traps"

Nurture a positive view of myself, others and the future



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Behavioral Fitness

Develop safe regular routines.

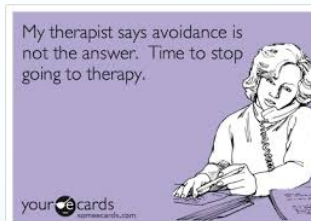
Stay calm under pressure. Keep my cool.

Break tasks into doable subtasks.

Avoid avoidance

Avoid people, places and things that get me into trouble

Self-disclose to a trusted person.



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Behavioral Fitness

Join a social group that gives my life a sense of purpose.

Establish a "new normal." Renegotiate my role and responsibilities.

Adopt a "can do" attitude.

View setbacks as "learning opportunities."

improve my behavioral fitness.



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Spiritual Fitness

- Use positive religious/spiritual ways of coping
- Rekindle hope
- Spiritual/religious/devotional activities
- Spiritual/religious rituals



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Spiritual Fitness

Forgive others & oneself

Use “self-compassion” and “loving-kindness” meditations

Reset my “moral compass” and refocus on my core

Recognize life is short and commit to living each moment fully



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The Power of Educators

Liz Huntley's story: no one changed her home life- but her positive connections with her educators offset the impacts of her ACE score (10)-



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How will you promote resilience?



In yourself? In your students?

SUMMARY: Authenticity, Kindness, Connection/Purpose

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Resources

Foundry

Anxiety Canada

Parent Support Services Society of

Open Mind BC

Managing Anxiety and Stress in Families with Children and Youth During the COVID-19 Outbreak

Kelty's Key

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15 Trauma Healing Goals - Symbolic Representations

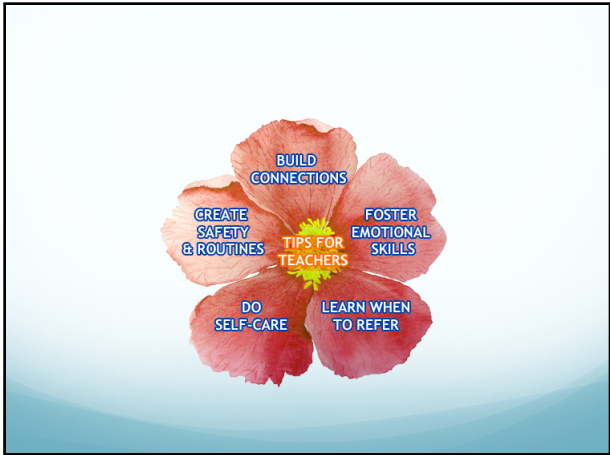


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Strategies for coping with an Amygdala Hijack



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