Managing Stress and Anxiety during times of Uncertainty

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No Disclosures to Report

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Section on Development and Affective Neuroscience (SDAN)

- Daniel Pine, MD, Chief
- 2 Research Clinicians
- 7 IRTAs (research assistants)
- 4 Postdoctoral Fellows
- 3 Staff Scientists
- Nurse Practitioner

SDAN uses Functional Magnetic Resonance Imaging (fMRI) to identify altered brain circuitry in those with Social Anxiety, Generalized Anxiety, and behaviorally inhibited temperament in order to inform treatment development and outcome prediction in pediatric anxiety disorders.

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Agenda

1. Impetus for Research
2. Biological Basis of Anxiety
3. Cognitive Behavioral Theory of Anxiety
4. Treatment Strategies
5. Questions and Comments

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Anxiety in the News

Kids In India Are Asking Heartbreaking COVID-19 Questions. Here's How To Answer Them

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Jordan's Story: Isolated, Anxious and Failing His Online Classes, an 11-Year-Old Texas Boy Considered Suicide

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Prevalence and Risk Factors

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Significance and Prevalence

- Anxiety disorders are the most common mental illness in the U.S., affecting 40 million adults in the United States age 18 and older, or 18.1% of the population every year.
- Anxiety disorders are highly treatable, yet only 36.9% receive treatment.
- People with an anxiety disorder are three to five times more likely to go to the doctor and six times more likely to be hospitalized for psychiatric disorders than those who do not suffer from anxiety disorders.
- Anxiety disorders develop from a complex set of risk factors, including genetics, brain chemistry, personality, and life events.
- Most children and adults use anxiety to help them make good decisions
  - Overestimate threat and underestimate efficacy

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Prevalence & Interference

Anxiety is most common form of psychopathology in children (1 in 5)
- Levels of interference at school, social engagements, home, sporting events, etc.

Preschoolers show significant levels of behavioral and emotional problems, including ANXIETY
- In a classroom, 4-6 out of every 30 will have significant anxiety

Children of parents with anxiety are 6-7 times more likely to have anxiety
- Symptoms of anxiety manifest early on in childhood

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Predisposing and Precipitating Factors

- Family History
  - Parent and family members with anxiety and/depression puts child at risk
- Child Temperament
  - Emotional lability, irritability, inhibition, wariness, etc.
- Parent Reaction and Modeling
  - Reactions to your children may increase behavior
  - Children/Teens will often imitate their parents coping strategies
- Stressors/Traumatic Life Events
  - Death, accidents, academic stress, separation/divorce
- Peer Interactions
  - Bullying
- Parenting Styles
  - Parents who are less accepting and warm, more controlling or intrusive, and more enmeshed

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Covid-19 & Social/Racial Unrest

- Increases in mental health needs for kids, adults, and families during these stressful times
- Anticipate rises in anxiety, depression, and mood related disorders due to pandemic
  - Studies highlight significant increases in mood symptoms, anxiety, irritability and mood changes in children as young as 3 through 18 years old
  - https://www.psychiatrictimes.com/view/new-findings-children-mental-health-covid-19

Covid19 pandemic | George Floyd | Political Divide | School Disruption | Social Isolation

- Identification and intervention becomes even more important

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Preliminary Findings from NNT/SMDN Labs at NIH

- Melissa Brotman
- Ellen Liebenloft
- Simone Haller
- Allison Jafe
- Camille Archer



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Clinical Characteristics

- N=92
- Diagnostic Groups
  - ANX = 38 (41.3%)
  - HV = 23 (25%)
  - ADHD = 17 (18.5%)
  - DMDD = 14 (15.2%)
- Gender
  - Male = 52 (56.5%)
  - Female = 40 (43.5%)
- Age (years)
  - 13.65(2.83)
  - 8-18

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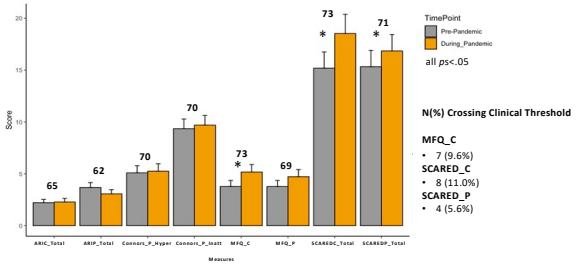
Aim 1: Examine changes in Anxiety, Depression and Irritability during the pandemic



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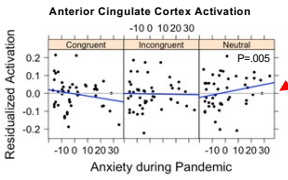
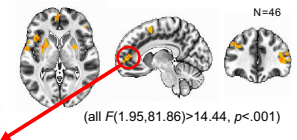
Aim 4: Can we predict symptom change with activation patterns?

Model 1. During-pandemic **anxiety parent-report**, controlling for pre-pandemic anxiety



Predicting change in parent-reported anxiety



(all $F(1.95,81.86)>14.44$, $p<.001$)

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Summary of Results

1. Increases in anxiety as reported by child and parent, and increase in depression as reported by child
2. Change in parent-reported anxiety was mediated by the parent-reported CIS and parent-reported CRISIS COVID worries
3. Changes in child-reported anxiety and child-reported depression were mediated by parent-reported CRISIS COVID worries
4. No Attention bias findings
5. Pre-pandemic increased activation to neutral faces was associated with increases in parent-reported anxiety during the pandemic.

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Recognizing Signs and Symptoms in Children & Adolescents

Young Children

- Increased irritability, startling, and crying
- Sleep difficulties
- Separation anxiety
- Bedwetting and regressive behaviors
- Behavioral difficulties and tantrums

Adolescents

- A loss of interest in activities
- Emotional lability, irritability, inhibition, wariness, etc.
- Changes in appetite
- Difficulties with concentration or memory
- Increase in drug or alcohol use
- Thoughts about death or suicide

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Coping with Pandemic and Re-entry Stress

- Sleep
- Eat healthy, balanced meals
- Exercise
- Avoid drugs and alcohol
- Stay connected to others
- Get outside
- Take Breaks
- Meditation

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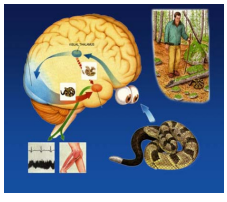
Neurological Basis of Anxiety



- Anxiety is adaptive!
  - Imaging research highlights fear circuit in the brain.
- Differences in brain activation in patients vs. healthy participants (McClure et al., 2007)
- Patients experience more "false" activations (Monk et al., 2008; Pine & Grun, 2009)
- Two-system approach (LeDoux & Pine, 2016)

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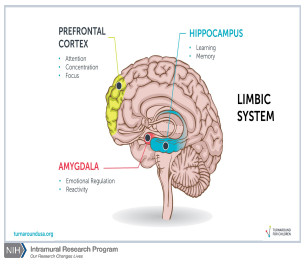
Stress, Anxiety, and the Brain: Fight or Flight



The stress response begins in specific areas of the brain when threat is detected:

1. Primarily focus on the amygdala, which sends a distress signal to the hypothalamus.
2. The hypothalamus is like the command center which communicates with the rest of the body.
3. The flight or fight response is then activated after receiving the sighals

Multiple pathways to activation, including the vision, olfactory, tactile symptoms.

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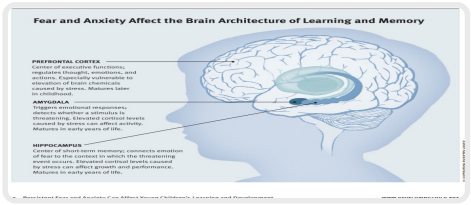
Impact of Anxiety



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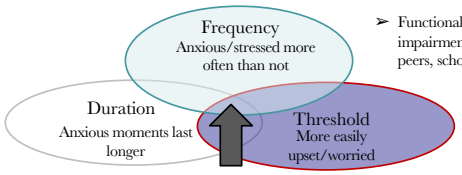
When does anxiety become impairing?

- Increased proneness to anxiety relative to others/peers
- When considering stress and anxiety during challenging times like these, at what point to we consider it to be problematic?



- Functional impairment: family, peers, school

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SIGNS OF ANXIETY

It is normal to be worried and stressed during times of crisis. While worry is a part of anxiety, people with anxiety tend to experience more exaggerated feelings of worry and tension. Some common symptoms include:

- Uncontrollable worry or dread
- Stomach and digestion problems
- Trouble with concentration, memory, or thinking clearly
- Increased heart rate
- Changes in energy and difficulty sleeping
- Irritability and/or restlessness

In extreme cases of anxiety, people may experience a panic attack. Panic attacks are often mistaken for heart attacks at first, but usually go away when people are able to talk to someone else to calm their fears and practice deep breathing.

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Mental Health America Toolkit 2020

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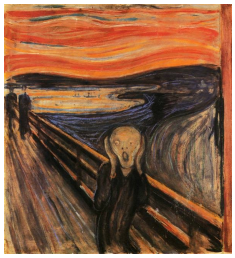
Anxiety Disorders

- Separation Anxiety Disorder
- Generalized Anxiety Disorder
- Social Anxiety Disorder
- Specific Phobia
- Panic Disorder
- Selective Mutism



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Attention Training Research

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Attention Bias Modification Training (ABMT)

- ABMT is a computer-based cognitive training program that we are using to augment Cognitive Behavioral Therapy (CBT).
- We are using a modified dot-probe task to increase youth engagement and attention during training.
- The dot-probe task indexes attentional biases using the difference in reaction times to target stimuli (Abend, Pine, & Bar-Haim, 2014).
- In addition, visual search for non-threat targets in the context of threatening distractors has been successfully used as ABMT (Waters et al., 2016).
- Our ABMT is a combination of the dot-probe and visual search methodologies (White et al., 2017).

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Attention Bias Modification Training

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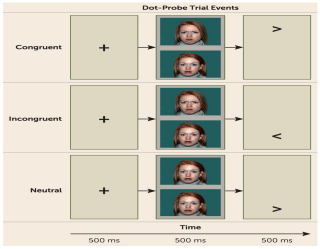
FIGURE 1. The Dot-Probe Task



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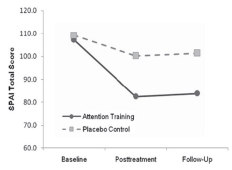
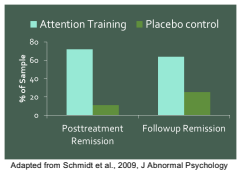
CBT plus ABMT





Adapted from Schmidt et al., 2009, J Abnormal Psychology

- Neuroplasticity of the brain.
- Shows that attention is plastic. Exciting!!!!!
- Attention training away from threat corresponds to lower anxiety.

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Puzzle Task

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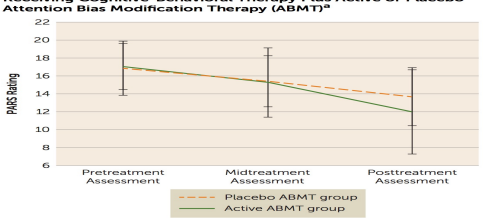
CBT plus ABMT Pediatric Group Differences

FIGURE 3. Anxiety Ratings in Youths With Pediatric Anxiety Receiving Cognitive-Behavioral Therapy Plus Active or Placebo Attention Bias Modification Therapy (ABMT)[a]



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Recent ABMT Findings

- AMBT and Social Anxiety (Abend et al. 2020)
  - Learning seems to happen across sessions
  - Age was a factor, older participants had greater learning gains
  - Learning magnitude predicted post treatment report of social anxiety symptoms
- Music ABMT (Linetzky et al. 2019)
  - Motivate kids to keep attention on screen
  - Sig. decreases reported by clinician and parent, but not by child after 8 weeks 2x/week sessions

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Provider Self-Care

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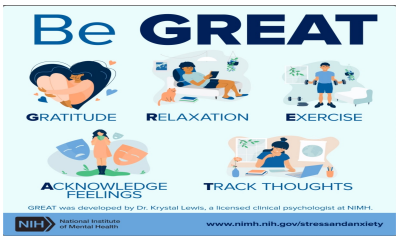
Be GREAT: Reminder for Self-Care



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Treatment Strategies

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Common Strategies for Treating Anxiety

- Cognitive Behavioral Strategies
- Mindfulness/Yoga
- Relaxation Training
- Play therapy
- Distress Tolerance/ Skill Building
- Medication

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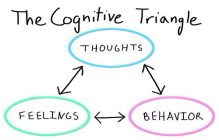
Cognitive Behavioral Therapy (CBT)



- Evidence-based treatment for youth with varying forms of psychopathology
- Research suggests most effective treatment for anxiety
- Focuses on helping kids identify maladaptive thoughts, avoidant behaviors, and disruptive feelings

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Triad Example- Social Phobia

- Thoughts:
  - "Everyone is laughing at me", "I will mess up and they will think I'm dumb", "They are going to think I'm weird"
- Feelings:
  - Increased HR, shaking, dizziness, shallow breathing, sweaty palms
- Behaviors:
  - Avoid social situations, school refusal, freezing, fleeing, poor eye contact, etc.

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Common Principles of CBT

- Psychoeducation
- Somatic Management Skills training
- Cognitive Awareness and restructuring
- Exposure Methods
- Relapse Prevention

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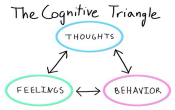
First Steps



- Research information and identify a CBT provider for a referral/assessment if necessary:
  - Anxiety and Depression Association of America (ADAA.org)
  - Anxiety BC (Anxietybc.org)
  - Society of Clinical Child and Adolescent Psychology (Effectivechildtherapy.org)
  - Association of Behavioral and Cognitive Therapies (abct.org)
  - Centers for Disease Control (CDC)
  - National Institute of Mental Health (NIMH)

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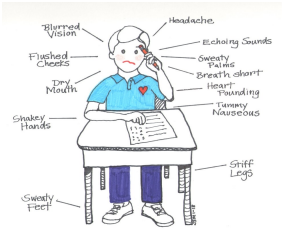
Physiological Symptoms

How anxiety manifests physically:

- Stomachaches/ headaches
- Nausea
- Frequent trips to the bathroom
- Tightness/ pain in the chest
- Sweating
- Dizziness or light headedness
- Heart racing
- And many more……



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Reappraisal of anxious arousal

- Metaphor of fire alarm- brain doing the right thing at the wrong time
- "In this moment"
- Being a "curious observer"
- Anxiety as a "wave"
- Deep breathing
- Guided imagery/Visualization
- Progressive Muscle Relaxation
- Meditation
- Grounding Techniques !
- Telling self: This is just anxiety!

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Using your 5 senses while visualizing

- Picture yourself laying on a beach chair recliner:
  - 5 things you see
  - 4 things you can feel
  - 3 things you hear
  - 2 things you smell
  - 1 thing you can taste

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Cognitive Distortions

Individuals with anxiety disorders:

- Assume bad things will happen
- Biased attention to threatening words and criticism
- Interpret ambiguous situations as threatening
- More negative self-talk
- Underestimate their strengths
- Assume they cannot handle stressful situations
- Catastrophic thinking: Assume the worst

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Changing Cognitions

Anxious Thoughts:
- I am in danger
- Everyone is mean/No one likes me.
- I can't cope
- Things never go my way

Non-Anxious Thoughts:
- I am resilient/strong
- ~ is nice to me
- I may not like doing it, but I can handle it
- Generally, things work out ok

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Cognitive Tools

Decreasing Avoidance:
- Metacognitive awareness of urge to escape or avoid
- Building distress tolerance
- Swatting flies
- Rehearse and use self-talk
- Urges do not dictate action. We have control over how we choose to respond to our thoughts.

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Power of Exposures

- Behavioral part of CBT should be exposure work
- Teaching kids to face their fears
- Research suggests brain learns new associations between unconditioned stimulus and conditioned response
- Important to take small steps, model the behavior first, and encourage trying new things

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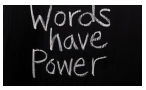
How to Present

WE know that you have been having a hard time leaving mom and dad to go places. We realize that allowing you to stay home when ANXIOUS/NERVOUS/UPSET is making things worse. By facing your fears, we'll see that you can handle things that seem too scary. Changing what we do can help you reach a goal you have really wanted like _____(relevant incentive at school/home). Let's talk about some ideas about how we can make this easier for you.



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Fear Hierarchy

Step	Situation	Fear Rating
12.	*Petting a larger dog off leash*	10
11.	*Petting a larger dog on a leash*	9
10.	*Holding a puppy*	9
9.	*Petting a puppy that someone is holding*	8
8.	*Standing beside, but not touching, a dog on a leash*	7
7.	*Standing 4 feet away from a dog on a leash*	6
6.	*Standing 8 feet away from a dog on a leash*	5
5.	*Standing across the street from a dog on a leash*	4
4	*Looking at a dog across a park through binoculars*	3
3.	*Looking at a dog through a window*	3
2.	*Watching a film with dogs in it*	2
1.	*Looking at photos of dogs*	2

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Creative Exposures

- GAD: Hand in messy homework, give wrong answer in class, fail to complete classwork, Imagine self failing middle school/repeating grade, wear PJS to school, going to camp with messy hair, taking mask off when outside and away from people.
- Social: zoom parties, inviting student to join session, join a club, ask teacher about their weekend.
- Separation: Stay late afterschool/camp, draw picture/write story with attachment figure getting hurt, staying alone in room.
- Physical symptoms: Active games to induce feared feelings, interoceptive practice.

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Managing Anxiety at Camp

Unhelpful	Helpful
❖ Accommodate the anxiety too much	❖ Be sensitive
❖ Let the child avoid	❖ Educate
❖ Single the child out/ridicule	❖ Provide positive feedback
❖ Provide excessive reassurance	❖ Be calm
❖ Be too directive ("taking over")	❖ Be consistent
❖ Criticize the child	❖ Slow exposure
	❖ Seek additional resources

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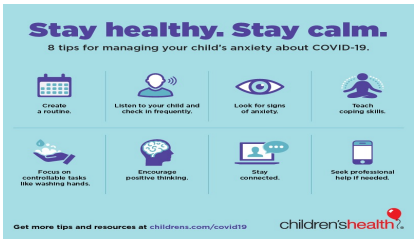
Helping Parents to Help Children Cope



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Book Recommendations

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Thank you for you time and attention!

Questions?

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