

Neuroscience and Novel Therapeutics Unit



Childhood Irritability Newsletter Spring 2023

Our mission

The goal of the Neuroscience and Novel Therapeutics Unit (NNT) is to develop brain-based treatments for children with serious psychiatric disorders. Research conducted in NNT is part of NIMH's mission to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure.

Check out our website

Visit our website to learn more about our research findings and view some of our recent presentations in the "Talks and Multimedia" section. The site also includes a "Patients and Families" page that has lots of info about our current research and how to participate in our studies. We hope you find it helpful: <https://www.nimh.nih.gov/nnt>

Meet our team

Our team is made up of clinicians, research assistants, and research fellows who are passionate about improving the lives of children with irritability, and those affected by these difficulties.

Postdoctoral fellow: Dr. Lana Grasser



Dr. Lana Grasser joined our lab as a Postdoctoral Fellow last Fall. She studies brain images and heart rate data from your visits at NIH! Dr. Grasser grew up on a lake in Michigan and was a pre-professional ballet dancer before becoming a neuroscientist. In her free time, she enjoys practicing yoga, cycling, and running along the Potomac River.

Research Assistant: Kenny Fling



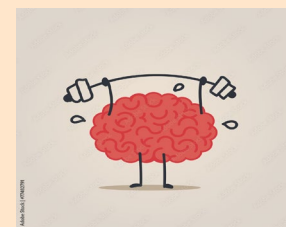
Kenny Fling is a Postbaccalaureate who joined our lab as a research assistant last Summer. He plans to pursue a PhD in clinical psychology. You may have talked to him if your child used either of our mobile apps "CALM-IT" or "RATE-IT". In his free time, Kenny enjoys trying new restaurants and going to concerts and museums. He recently presented research posters at the 2023 Anxiety and Depression Association of America (ADAA) and American Psychological Association (APA) conferences.

Clinician's Corner



Our clinicians have expertise in working with children and adolescents who have challenges with anger management or emotion-regulation and experience conflict at home, school, and/or with peers. We are happy to talk with providers in the community to share our research and recent findings! For more information, please contact us at 301-402-0239 or irritablekids@mail.nih.gov

Brain Facts Quiz



- A) What organ system is the brain part of?
i.) Nervous ii.) Immune iii.) Digestive
- B) True or False: When we learn new things, we change our brains by forming new connections.
- C) How many pounds does the brain weigh?
- D) About how many neurons (a type of cell) does the brain have?
i.) 200 billion ii.) 10,000 iii.) 86 billion

Research Updates: What does irritability mean?

We often use the word “irritability” when talking with children, parents, guardians, and care providers. But what does irritability mean?

Irritability is defined as an increased proneness to anger that can reach a clinically impairing level. That is, a child’s proneness to anger can be causing problems at home, with peers, and/or at school.

We think of irritability as having two components: tonic irritability and phasic irritability. We define tonic irritability as a pervasive irritable mood whereas phasic irritability refers to the temper outbursts associated with irritability. A combination of both tonic and phasic irritability symptoms is required to make an official Disruptive Mood Dysregulation Disorder (DMDD) diagnosis. Children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), an anxiety disorder, or other diagnoses often struggle with irritability, as well.

CBT for Irritability, where are we now?

We are currently recruiting participants for a study of an adapted version of **cognitive behavioral therapy (CBT)** to target chronic irritability in children and adolescents.

Therapists at NNT work with children and parents to build an “anger hierarchy” of situations that the child finds angering. They then practice “exposing” the child to these anger-provoking situations in the therapy sessions. For example, during the therapy session, a child might be asked to stop playing a fun video game while trying to tolerate the discomfort. By practicing this frustrating situation over and over, the child is able to learn skills to regulate their emotional reactions. We are not trying to completely erase children’s frustration in this treatment. Instead, we are working with children (and their parents) to help kids who experience irritability have shorter and less intense temper outbursts when frustrated. When we previously piloted this treatment, we found that the treatment had an overall impact on the severity of behavioral outbursts many children have. Some of our early findings even seem to indicate changes in the nervous system over the course of treatment—children who have participated in this treatment are showing improvements in *heart rate variability*, a measure of how the body is able to regulate itself in response to stress and frustration.

This treatment also includes a **parent management training (PMT)** component to help parents manage their children’s behaviors. PMT has been shown to be helpful with children with behavioral difficulties.

How to continue being involved?

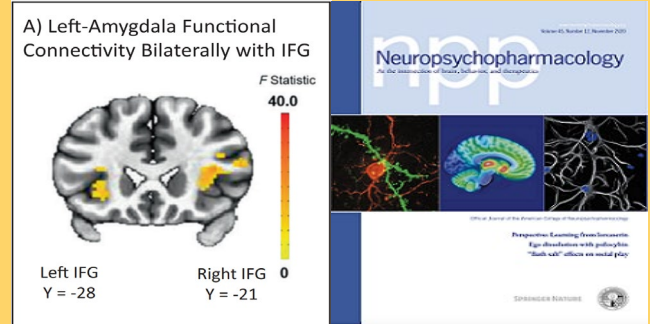
Thank you for your time and helping us learn more about children and emotions. Using brain imaging and smart phone apps, we continue to study how children’s feelings and behavior change as they grow.

If you are interested, please contact us at 301-402-0239 or irritablekids@mail.nih.gov

Your child will be compensated for their participation.

Research Updates:

Irritability is Associated with Specific Brain Connectivity Pattern



Using data collected when kids played a game looking at images during brain scanning, we found a relationship between connectivity of the brain and looking at emotional faces. This research by Dr. Reut Naim and our team was published in the June 2022 journal, *Neuropsychopharmacology*.

Perhaps your child will be playing this game in one of our studies!

Community Outreach



Members from our extended team in the Emotion and Development Branch at NIMH brought a series of interactive “Brain Talks” to the 3rd graders at Kemp Mill Elementary School. Pictured above are three of our research assistants teaching kids strategies to stay calm in stressful situations and manage difficult emotions. We are continuing to plan these fun educational lessons, hopefully in a classroom near you!

[NNT Website:](#)

