MCG PEDIATRIC PODCAST

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Season 1, Episode #16
Adverse Childhood Experiences

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Show Notes: Podcast Summary

Goals and Learning Objectives:

- To understand what constitutes an Adverse Childhood Experience and the pathophysiology behind the long-term health consequences of ACEs.
- To learn the basics of introducing ACEs in conversation with parents and screening for ACEs at pediatric clinic visits.
- To increase comfort in caring for patients with positive ACE screens by learning helpful skills and community resources available.

Background

Adverse childhood experiences are common with nearly 67% of adults reporting at least one experience, and 16% reporting greater than four experiences. The CDC defines adverse childhood experiences as potentially traumatic events that occur during childhood. These can range from personally experiencing violence, abuse, or neglect to simply witnessing violence or having a family member attempt suicide. In general, any aspect of a child's environment that can undermine their sense of safety and security classifies as an adverse experience. Some common examples include growing up in a household affected by substance misuse, mental health problems or any instability in the family, including parental separation/divorce or household members being in jail.

Table 1
A adverse childhood experiences, by category

ACE category	Definition
Abuse	• Psychological *Did a parent or other adult in the household …* ◦ Often or very often swear at, insult, or put you down? ◦ Often or very often act in a way that made you afraid that you would be physically hurt? • Physical *Did a parent or other adult in the household …* ◦ Often or very often push, grab, shove, or slap you? ◦ Often or very often hit you so hard that you had marks or were injured? • Sexual *Did an adult or person at least 5 years older ever …* ◦ Touch or fondle you in a sexual way? ◦ Have you touch their body in a sexual way? ◦ Attempt oral, anal, or vaginal intercourse with you? ◦ Actually have oral, anal, or vaginal intercourse with you?
Neglect	• Emotional *Did you often or very often feel that …* ◦ No one in your family loved you or thought you were important or special? ◦ Your family didn't look out for each other, feel close to each other, or support each other? • Physical *Did you often or very often feel that …* ◦ You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? ◦ Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
Household dysfunction	• Divorce or separation ◦ Were your parents ever separated or divorced? • Mother treated violently *Was your mother (or stepmother) …* ◦ Often or very often pushed, grabbed, slapped, or had something thrown at her? ◦ Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? ◦ Ever repeatedly hit over at least a few minutes or threatened with, or hurt by, a gun or knife? • Substance abuse ◦ Did you live with anyone who was a problem drinker or alcoholic or anyone who used street drugs? • Mental illness ◦ Was a household member depressed or mentally ill or attempt suicide? • Criminal behavior in household ◦ Did a household member go to prison?

Adapted from Adverse Childhood Experiences Study. Finding your ACE score. Available at: http://www.acestudy.org/yahoo_site_admin/assets/docs/ACE_Calculator-English.127143712.pdf. Accessed May 2, 2016.

Bucci et al (2016)

Pathophysiology The pathophysiology of adverse childhood experiences pertains to pathologic activation of the physiologic stress response. There are three different types of stress: positive, tolerable, and toxic. A positive stress response is a brief physiologic response to a developmentally appropriate stressor that requires a

responsive adult to help the child cope with the stressful situation. Think of a young child getting a vaccine or a high school student preparing for an exam. Once the stressor is complete, the child can relax and they return to a non-stressed baseline, especially if there is a parent there to provide them support.

Tolerable stress is essentially an adverse experience in the context of a supportive environment. Examples include the sudden death of a close family member or parents getting divorced. This increased stress level is tolerable due to the presence of a support system that helps the child cope with the situation and prevents ongoing stress related to this experience. Eventually, the body gradually returns to baseline and long-term effects are minimized.

Toxic stress, however, occurs with strong, frequent, or prolonged activation of the body's physiologic stress response. Common causes include exposure to ongoing abuse, neglect, or parental substance abuse.

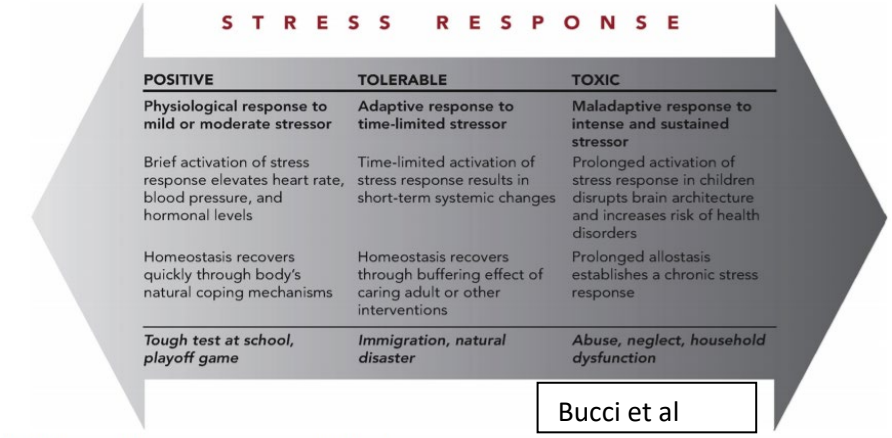
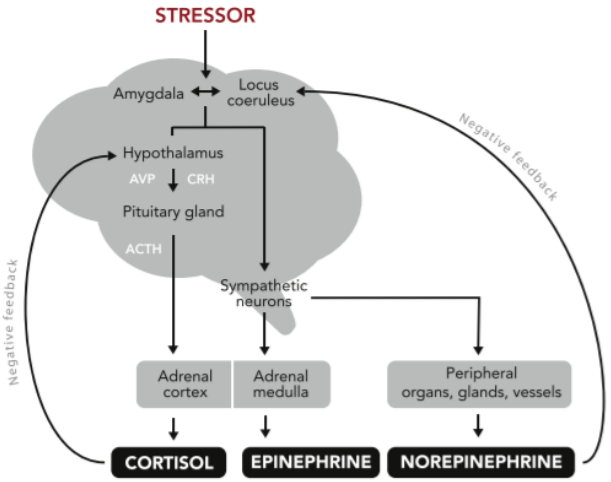


Fig. 2. Spectrum of the stress response: positive, tolerable, and toxic.

The best-studied maladaptive physiologic changes include overactivation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system. These combine to result in excessive cortisol and catecholamine release. This maladaptive neuroendocrine response stimulates the amygdala, reticular activating system, and other areas in the limbic system to maintain the 'fight-or-flight' response, leading to the long-term health consequences.

When the brain is so focused on the stress response, and just surviving, other areas of the brain get ignored. This can lead to problems with memory, learning, and executive functioning, in addition to chronic physical problems like hypertension and impaired glucose tolerance. Unbuffered toxic stress can also increase the risk of substance abuse, anxiety, depression, and cardiovascular disease.



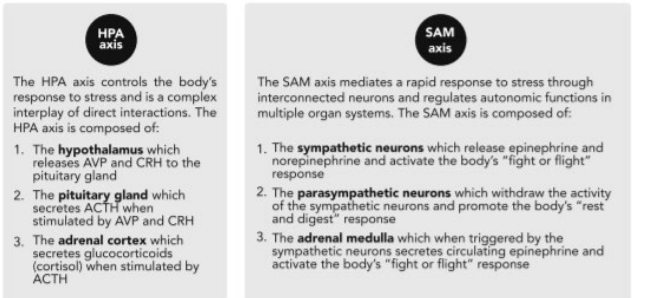


Fig. 3. Stress response pathway. HPA axis, hypothalamic-pituitary-adrenal axis; SAM axis, sympathoadrenomedullary axis; AVP, arginine vasopressin; CRH, corticotropin-releasing hormone; ACTH, adrenocorticotropin hormone.

Bucci et al

Long

The long-term health effects have been found to encompass both mental and physical health. Exposed infants have been found to have growth delays, cognitive delays, and sleep disruption. Children have been found to have higher rates of asthma, recurrent infections, increased chance for hospitalization, learning difficulties and behavioral problems. These experiences may also contribute to increased risk-taking behavior, such as experimenting with drugs, smoking, sexual promiscuity, and alcohol abuse. The effects of ACEs have been shown to extend well into adulthood and lead to increased rates of obesity, cardiovascular disease, and even cancer. Some experts say if we could get rid of ACEs, 60% of adult chronic disease would disappear. However, it is also important to acknowledge that not all adverse childhood experiences lead to negative consequences; many children who are resilient or grow-up in a nurturing environment are more likely to be spared much of the long-term morbidity mentioned above. Thus, improving resiliency and introducing nurturing adult role-models can be a protective mechanism to implement once adverse experience have been recognized. There is a dose-response relationship between the number of experiences and length of exposure and the long-term morbidity observed in patients, thus screening for ACEs and identifying them early can help combat the consequences.

Table 2
Health outcomes associated with early adversity

Outcome	Adults	Children and adolescents
Mental/behavioral health	• Alcoholism • Anxiety • Bipolar disorder • Depression • Difficulty controlling anger • Hallucinations • High stress • Panic reactions • Posttraumatic stress disorder • Smoking • Substance abuse • Suicide	• Bullying • Dating violence • Delinquent behavior • Learning difficulties • Physical fighting • Weapon-carrying
Physical health	• Any cancer • Autoimmune disease • Cardiovascular disease • Chronic lung disease/chronic bronchitis or emphysema • Diabetes • Early death • Fair or poor self-rated health • General poor health • Headaches • Hepatitis or jaundice • Ischemic heart disease • Obesity • Sexual transmitted infections • Sleep disturbances • Skeletal fracture • Stroke	• Acute lower and upper respiratory infections • Adolescent pregnancy • Attention deficit hyperactivity disorder • Asthma • Autism • Conjunctivitis • Dermatitis and eczema • Illness requiring a doctor • Intestinal infectious disease • Lifetime asthma • Otitis media • Overweight or obese • Poor dental health • Poor general health • Pneumonia • Urinary tract infections • Urticaria • Viral infections of unspecified site

Data from Refs. [9,10,20–24,26,125–131].

Bucci et al (2016)

Screening

Screening for ACEs can be a sensitive topic for many families, so it's important to take a non-judgmental approach that focuses on the health of the child and does not come across as blaming the parent/caregiver. The opening question could be phrased as "have there been any recent changes at home or at school" instead of "are there any conflicts at home?"

Additionally, it is important to recognize that introducing the topic of adverse childhood experiences can potentially lead to disclosure of trauma from the parent's childhood. It is important to acknowledge what is being said and empathize with the parent. Offering resources, such as a crisis line, can help the parent have an

outlet to discuss this experience if they so wish. It is important not to try to fix the problem and not to glaze over the experience as this can minimize the parent's experience. And it is imperative not to comment on how you know what they are going through or went through because no matter how similar two people's traumatic experiences are, the personal experience following the trauma is different and how individuals interpret those experiences can vary widely.

The first step is to identify children at high risk for toxic stress, allowing the pediatrician to provide targeted support for patients and families. Unfortunately, it can be difficult for pediatricians to set aside time to screen for ACEs in a clinic visit that is already packed with things to do. In one survey of pediatric patients and their families only 4% received a thorough screen for ACEs and 32% did not get screened at all. Implementing a standardized questionnaire that can identify family or community-level factors that place the child at risk for toxic stress is likely a good option to ensure all children are screened. Whatever questionnaire your office chooses to use, it is important to ensure you screen for the most common causes of toxic stress including maternal depression, substance use, domestic or community violence, food scarcity, and poor social connectedness. There are some common screening questionnaires linked in the resources section below.

Screening for adverse childhood experiences takes time. Many of the screenings we do now have codes and can be billed, but specific ACEs screening is only reimbursed in one or two states. We need to continue to advocate for proper reimbursement for these important services.

A Positive Screen

Pediatricians need to be familiar with the resources available in their community for children who screen positive and might be suffering from ACEs or toxic stress. This requires a community collaboration with social workers, teachers, school nurses, coaches, counselors, and civic leaders to create a supportive environment for the child. The most important thing that can be done is to increase the number of supportive relationships around the child so they can be protected, or buffered, against the formation of toxic stress.

Involvement in mentoring activities available in individual communities like after-school programs, sports teams, or Big Brother/Big Sister groups may provide additional opportunities for supportive relationships. These role models can teach children to build resilience and learn how to cope with adversity in a healthy, adaptive way. Additionally, partnering with early intervention services can help provide support and education to our young families and trying to prevent or minimize toxic stress where possible.

However, for children already experiencing large amounts of toxic stress or options are more limited because we know that pediatric mental health resources are very limited. As pediatricians, we need to strongly advocate for more effective interventions for children with toxic stress. This may include the formation of local traumatic stress networks or increasing the number of accessible and affordable mental health providers. Advocacy for the development and implementation of interventions is imperative to protect children from the adverse experiences that can negatively impact the trajectory of their lives. Find a child and offer yourself as that supportive relationship they so desperately need.

Resources

Dr. Nadine Burke-Harris has set the stage for addressing adverse childhood health with the work her team has done in California. The ACEs Aware website is a wonderful resource to learn more about ACEs and to participate in a free two-hour training module. The website also lays out the policy that Dr. Burke-Harris has implemented in California in regards to screening for ACEs for which the state of California does provide reimbursement. Other resources mentioned in the podcast are listed below:

- Screening Resources
  - Bright Futures Questionnaire: https://brightfutures.aap.org/materials-and-tools/tool-and-resource-kit/Pages/Medical-Screening-Reference-Tables.aspx
  - Pediatric ACEs and Related Life Events Screener (PEARLS) by Bay Area Research Consortium on Toxic Stress and Health: https://www.acesaware.org/screen/screening-tools/
- Community Resources
  - Big Brother/Big Sister: https://www.bbbs.org/
  - Boys and Girls Club: https://www.bgca.org/
  - Georgia Family Connection Partnership: https://gafcp.org/
- ACEs information
  - ACEs Aware: https://www.acesaware.org/
  - ACEs Aware Training Module: https://training.acesaware.org/
  - My GCAL: https://www.georgiacollaborative.com/providers/georgia-crisis-and-access-line-gcal/
  - SafeCare: https://www.childwelfare.gov/topics/preventing/prevention-programs/homevisit/homevisitprog/safe-care/

References:

Bucci, M., Marques, S. S., Oh, D., & Harris, N. B. (2016). Toxic stress in children and adolescents. *Advances in Pediatrics*, *63*(1), 403-428.

Felitti V.J. Anda R.F. Nordenberg D. et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) study. *Am J Prev Med.* 1998; **14**: 245-258

Garner AS, Shonkoff JP, Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., Pascoe, J., & Wood, D. L; Committee on Psychosocial Aspects of Child and Family Health; Committee on Early Childhood, Adoption, and Dependent Care; Section on Developmental and Behavioral Pediatrics. Early childhood adversity, toxic stress, and the role of the pediatrician: translating developmental science into lifelong health. *Pediatrics*. 2012;129(1):e224-e231. doi:10.1542/peds.2011-2662

Harris, N. B., Marques, S. S., Oh, D., Bucci, M., & Cloutier, M. (2017). Prevent, screen, heal: collective action to fight the toxic effects of early life adversity. *Academic pediatrics*, *17*(7), S14-S15.

Kerker B.D. Storfer-Isser A. Szilagyi M. et al. Do pediatricians ask about adverse childhood experiences in pediatric primary care?. *Acad Pediatr.* 2016; 16: 154-160

Marie-Mitchell, A., Studer, K. R., & O'Connor, T. G. (2016). How knowledge of adverse childhood experiences can help pediatricians prevent mental health problems. *Families, Systems, & Health*, *34*(2), 128.

Oh, D. L., Jerman, P., Marques, S. S., Koita, K., Boparai, S. K. P., Harris, N. B., & Bucci, M. (2018). Systematic review of pediatric health outcomes associated with childhood adversity. *BMC pediatrics*, *18*(1), 83.

Shonkoff JP, Garner AS; Committee on Psychosocial Aspects of Child and Family Health; Committee on Early Childhood, Adoption, and Dependent Care; Section on Developmental and Behavioral Pediatrics. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*. 2012;129(1):e232-e246. doi:10.1542/peds.2011-2663

Vu, C., Rothman, E., Kistin, C. J., Barton, K., Bulman, B., Budzak-Garza, A., ... & Bair-Merritt, M. H. (2017). Adapting the patient-centered medical home to address psychosocial adversity: results of a qualitative study. *Academic pediatrics*, *17*(7), S115-S122.

Wolraich ML, Hagan JF Jr, Allan C, et al. Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents [published correction appears in Pediatrics. 2020 Mar;145(3):]. Pediatrics. 2019;144(4):e20192528. doi:10.1542/peds.2019-2528

National Center for Injury Prevention and Control, Division of Violence Prevention. (2020, April). Preventing Adverse Childhood Experiences. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/fastfact.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Fchildabuseandneglect%2Faces%2Ffastfact.html