DEDICATED TO THE HEALTH OF ALL CHILDREN®

Become a Member

Log In

Professional Resources | Continuing Medical Education | Advocacy & Policy | AAP Store | About the AAP



AAP.org > Advocacy & Policy > AAP Health Initiatives > Early Brain and Child Development > A Public Health Approach to Toxic Stress > The Science



ааа

About

A Public Health Approach to Toxic Stress

Early Brain

Development

and Child

The Science

Eco-Bio-Developmental Model of Human Health and

Social Emotional Safety Net Diagram

What it Means for Pediatricians: Translating the Science into Practice

Clinical Practice Transformation

Advocacy and Education

Resource Library

The Science

ranslating dramatic advances in basic developmental science into clinical practice will not be easily accomplished. That said, translating this science into practice is also an unprecedented opportunity to positively influence life-course trajectories. The following figures summarize the interactions between experience, epigenetics, brain development and behavior, and how significant adversity and physiologic stress in childhood affect this on-going process. These figures are from Helping Foster and Adoptive Families Cope with Trauma.

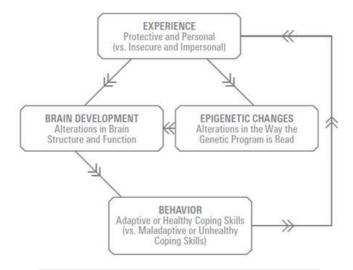


Figure 1

Development results from on-going and cumulative interactions between experience, biology, and behavior. If early childhood experiences are protective and personal, adaptive or healthy coping skills are more likely. If early experiences are insecure or impersonal, maladaptive or unhealthy coping skills are more likely.

CHILD / INDIVIDUAL STRESSORS PARENTAL / FAMILY STRESSORS · Abuse, neglect, chronic fear state · Parental dysfunction - substance abuse · Other traumas - domestic violence - natural disasters - mental illness - accidents and illness exposure to violence · Divorce / single parenting · Disabilities / chronic disease · Poverty SOURCES OF RESILIENCE* OTHER VULNERABILITIES* Temperament, social-emotional supports, Temperament, delays in development, and learned social-emotional skills and limited social-emotional supports

STRESS RESPONSE	Physiologic STRESS in Childhood		
	Positive	Tolerable	Toxic
DURATION	Brief	Sustained	Sustained
SEVERITY	Mild/moderate	Moderate/severe	Severe
SOCIAL-EMOTIONAL BUFFERING	Sufficient	Sufficient	Insufficient
LONG-TERM EFFECT ON STRESS RESPONSE SYSTEM	Return to baseline	Return to baseline	Changes to baseline

* Sources of Resilience and Other Vulnerabilities are able to mitigate or exacerbate the physiologic stress response

Figure 2. Precipitants and Consequences of Childhood Physiologic Stress Significant sources of adversity in childhood, from both individual and family stressors, precipitate a physiologic stress response. Sources of resilience and other vulnerabilities are able to mitigate or exacerbate the physiologic stress response. With sufficient levels of social-emotional buffering, the stress response can be either positive (and actually build resilience), or tolerable (and result in no sustained changes). With insufficient levels of social-emotional buffering, the physiologic stress response is sustained or severe and becomes toxic, resulting in potentially permanent alterations to the epigenome, brain structure, and behavior. These traumatic alterations may actually be adaptive in threatening or hostile environments, but they are often maladaptive in other, less threatening contexts.

TRAUMATIC ALTERATIONS

- · Epigenetic modifications
- · Changes in brain structure and function
- · Behavioral attempts to cope - May be maladaptive in other contexts

View What it Means for Pediatricians and Key Tips

print email share

Professional Resources | Continuing Medical Education **Practice Support Clinical Support AAP Policy** Research Journals & Publications Wehinars Pediatrics as a Profession

National Conference &

Exhibition (NCE)

PediaLink/Online Education **Maintenance of Certification Continuing Medical Education Publications Education in Quality Improvement for** Pediatric Practice (EQIPP) Life Support Programs Live Activities National Conference & Exhibition (NCE) Advocacy & Policy **AAP Policy** Federal Advocacy State Advocacy Community Advocacy AAP Health Initatives

Go to the AAP **Bookstore Clinical Publications** Life Support **Programs** Practice Management **Patient Education** Resources **Parent Resources Continuing Medical** Education (CME) Pediatric Buyer's Guide

AAP Store

About the AAP AAP Leadership **AAP Facts** Get Involved Committees, Councils & Sections Departments & Divisions Chapters & Districts AAP Press Room **Donate Now Employment at AAP** Advertise with AAP Corporate Relationships Help/Feedback