



ISSUE BRIEF

Using research to build better public policy for families

Early Experiences Matter: The Effect of Childhood Adversity on the Brain and Body

Early life experiences, especially before age three, can have lasting effects on a child's development. Adverse childhood experiences (ACEs) including abuse, neglect, and household challenges can stress the brain and the body. This brief summarizes how early childhood stress becomes toxic, its long-term effects, and policy options to prevent and mitigate it.

Birth to Age Three: A Time of Vulnerability and Opportunity

In the first three years of life, babies' brains are developing rapidly. During this sensitive period, the architecture of babies' brains is being built and billions of brain cells are being created and pruned in response to their experiences and environment.

The brain's architecture is being built even before birth. In one study, researchers measured mothers' stress hormones during pregnancy, then measured the infants' responses to a stressful event—their first blood draw at birth. While most babies recovered from the needle stick in about a minute, those whose mothers had high levels of stress early in pregnancy took longer to recover and showed hypervigilance to their surroundings as adolescents.

When Does Childhood Stress Become Toxic?

Not all stress is bad. Positive stress, such as taking an exam, provides minor challenges to the body and brain that are essential for healthy development. However, when children face prolonged, intense, or frequent adversities without supportive adult relationships that help them adapt and recover, stress becomes toxic. If those supportive relationships are absent, a child's stress response system remains activated, which can lead to poor brain development and an increased risk for disease and other problems later in life.

Long-Term Effects of Toxic Stress

Toxic stress has long-term health, economic, and social costs for individuals and communities. Toxic stress is tied to adverse health outcomes such as increased risk for mental health problems, increased prevalence and seriousness of diseases including cardiovascular disease and diabetes, impaired cognitive functioning, and accelerated aging. Additionally, significant childhood stress (i.e., six or more ACEs) reduces life expectancy by 20 years, as shown in Table 1.

Toxic stress also has adverse community-wide impacts due to increased educational expenditures, crime, and emergency room visits, as well as lost productivity, low workforce preparation, and continued health and economic disparities.

Table 1: Effects of various risk factors on life expectancy

Risk Factor	Reduction in life expectancy
Smoking	10 years
Obesity	6-7 years
High blood pressure	5 years
Diabetes	7-8 years
Childhood stress	20 years

Parental Brain Changes that Support Positive Parenting

During the time a baby's brain undergoes rapid development, new parents experience their own brain changes. These changes promote positive emotions, bonding, and caregiving behaviors; increase parental motivation; and alter the way parents handle stress. However, new mothers and fathers who are under stress, have substance abuse problems, did not receive caring parenting themselves, or have a history of trauma do not experience as many of these neurobiological changes. This makes parenting harder to navigate and positive parenting less likely. Public policies that take these factors into account can better address toxic stress.

Policy Options to Prevent and Mitigate Childhood Toxic Stress

Policy options to prevent and mitigate toxic stress could focus on decreasing stress in the environment where young children grow up, increasing parents' ability to help their children recover from stressful events, or both. Options include:

- **Supporting families' financial security** (e.g., tax credits, food assistance, housing) to decrease parental stress and facilitate children's brain growth, as there is evidence that brain volume and vocabulary increase as family income increases.
- **Increasing community resources and support** to decrease the stress that vulnerable families experience.
- **Designing family leave policies** that support the paired neurobiological changes that parents and the child experience when a child is born.
- **Expanding two-generation approaches**, which provide services to children and parents at the same time. These programs are particularly effective at building parents' skills and increasing their responsiveness to their children's cues.

Early life experiences affect children's development, immediate and long-term health and socioeconomic outcomes, and future families. Implementing evidence-based programs and policies for children facing adverse situations can prevent childhood toxic stress and strengthen Wisconsin's families. ●



Sarah Enos Watanura was one of three authors featured in the 37th Wisconsin Family Impact Seminar briefing report, "Building Strong Wisconsin Families: Evidence-Based Approaches to Address Toxic Stress in Children." She is the Director of the Child Health and Development Lab and an Associate Professor of Psychology at the University of Denver. This issue brief, written by Cassandra Martinchek, summarizes her seminar presentation and briefing report chapter. The presentation, report, and other seminar resources can be downloaded from wisfamilyimpact.org/fis37.