

From Adversity to Resilience in the Education Sector



Findings from Roadmap for Resilience: The California Surgeon General's Report on Adverse Childhood Experiences, Toxic Stress, and Health

How Adversity Can Impact Education Outcomes

Recent estimates suggest that **62%** of California adults have experienced at least one **Adverse Childhood Experience (ACE)**, and **16%** have experienced four or more (2011-2017 data).⁴ In a dose-response fashion, ACEs can lead to serious health risks, such as heart disease, stroke, cancer, dementia, mental health and substance use disorders, and premature mortality, including by suicide.⁵⁻¹⁵ **Toxic stress** occurs when severe, chronic, or repeated stress is experienced during sensitive periods of childhood development without sufficient buffering interventions.¹⁶⁻²² The **toxic stress response** is defined by the National Academies of Science, Engineering, and Medicine as “prolonged activation of the stress response systems that can disrupt the development of brain architecture and other organ systems, and increase the risk for stress-related disease and cognitive impairment, well into the adult years.”²³

Among the most direct and profound effects of ACEs and toxic stress is their impact on learning and school success. The toxic stress response can impair regions of the brain responsible for learning, memory, impulse control, attention, attachment, and emotional regulation, making success in the classroom and in forming healthy relationships in school more difficult.²⁴⁻²⁶ Extensive research has linked ACEs to detrimental educational, achievement, and learning outcomes, including:²⁷⁻³¹

- Trouble concentrating in class
- Lack of school engagement
- Not completing homework
- Absenteeism
- Repeating a grade
- School failure and noncompletion
- Behavioral difficulties
- Learning disabilities
- Increased diagnosis of ADHD
- Impaired executive and relational functioning
- Need for special education

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Further, the immune, metabolic, and inflammatory changes that result from toxic stress may increase the risk of infections, asthma, other atopic conditions, poor dental health, and somatic complaints, such as headache and abdominal pain, which can contribute to school absenteeism and impair the ability to engage fully when present.²⁷⁻³¹ Recognition of toxic stress as a health condition that is amenable to treatment is key to effectively addressing the impacts of early adversity and reducing stigma.

The Role of the Education Sector in Preventing and Mitigating Toxic Stress

Universal, selective, and targeted interventions that enable primary, secondary, and tertiary prevention of ACEs and toxic stress are the best practice. Several multi-tiered, trauma-informed school-based interventions have produced benefits, including improvements in school connectedness and students' health needs being met, and reductions in suicidality in specific California school districts.³²⁻³⁴

While screening for ACEs should be performed in the healthcare setting, educational professionals should understand how to recognize the signs and symptoms of toxic stress and how to connect students and families to the appropriate resources for support. Given their high-quality and prolonged daily contact with children, educators play a critical role in providing the daily doses of nurturing interactions that are key to buffering the toxic stress response. School personnel may connect families in need with a local healthcare provider trained in ACE screening, identification of signs and symptoms of toxic stress, and trauma-informed care through the [ACEs Aware provider directory](#).³⁵ Key to establishing trauma-sensitive and trauma-responsive educational environments is recognition and response of the prevalence of ACEs among educators and prevention of vicarious trauma and burnout.



Education Sector Strategies for Preventing and Addressing ACEs and Toxic Stress^{34,36}



Primary Prevention Strategies

Universal interventions target **the general student population** to reduce total dose of adversity and increase total dose of buffering factors, to prevent the development of toxic stress.

Secondary Prevention Strategies

Selective interventions target **at-risk students**. These students have experienced ACEs and may have evidence of early toxic stress impacts on learning, relationships, and/or health.

Tertiary Prevention Strategies

Indicative interventions target **high-risk students**. These students have experienced ACEs and have evidence of toxic stress impacts on learning, relationships, and/or health.



Primary Prevention Strategies

- ▶ Trauma-informed training and principles for all staff, including the impacts of ACEs and toxic stress on school functioning, relationships, and health, and the buffering effects of safe, stable, nurturing relationships in reducing toxic stress and physical and behavioral sequelae¹⁻³
- ▶ Promotion of a safe, calm, supportive, predictable, and nurturing environment and a positive school climate
- ▶ Wellness programming for staff
- ▶ Communication campaigns to build awareness about ACEs and toxic stress impacts, reduce stigma, and promote healing interventions
- ▶ Parental education and involvement

Secondary Prevention Strategies

- ▶ Referral of students who may be at risk for toxic stress to an ACEs Aware health provider
- ▶ Training on ACEs and toxic stress to include skills to identify early signs and symptoms
- ▶ A team approach to support students at risk for toxic stress
- ▶ Ensuring adequate access to trauma-informed school-based health services
- ▶ Parent education and involvement
- ▶ Restorative discipline practices to avoid retraumatization
- ▶ Promotion of sleep, nutrition, exercise, relationships, mental healthcare, mindfulness practices, and access to nature as mechanisms for regulating the stress response



Tertiary Prevention Strategies

- ▶ Close coordination between school and healthcare personnel, such as in implementing individualized education programs (IEPs) and referrals to needed healthcare services
- ▶ Team-based approaches to support students at risk for toxic stress
- ▶ School-based health services targeting toxic stress, such as mental health and mindfulness interventions
- ▶ Parent education and involvement
- ▶ Restorative discipline practices to avoid retraumatization
- ▶ Promotion of sleep, nutrition, exercise, relationships, mental healthcare, mindfulness practices, spirituality, and access to nature as mechanisms for regulating toxic stress

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