

From Adversity to Resilience in the Healthcare Sector



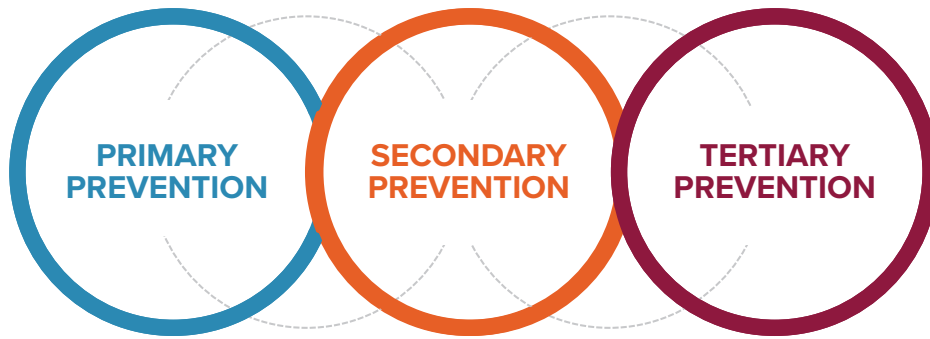
Findings from Roadmap for Resilience: The California Surgeon General's Report on Adverse Childhood Experiences, Toxic Stress, and Health

How Adversity Can Impact Health Outcomes

Adverse Childhood Experiences (ACEs) are highly prevalent¹⁻³ and are strongly associated, in a dose-response fashion, with some of the most common and serious health conditions facing our society, including nine of the 10 leading causes of death in the United States.¹⁻¹¹ ACEs promote these health impacts, at least in part, through activation of the **toxic stress response**,¹²⁻¹⁸ defined in the National Academies of Science, Engineering, and Medicine's 2019 consensus report 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.... For children, the result is the disruption of the development of brain architecture and other organ systems and an increase in lifelong risk for physical and mental disorders."¹⁹

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

A key component of California's strategy to reduce ACEs and toxic stress by half in a generation is the recognition of toxic stress as a health condition that is amenable to treatment and application of a rigorous scientific framework. The healthcare system, therefore, plays a central role in preventing, detecting, and mitigating toxic stress. These efforts are more important than ever in the context of coronavirus disease 2019 (COVID-19), which is increasing ACEs and other adversities, and reducing access to buffering resources, thereby escalating risk for toxic stress.



Healthcare Sector Strategies for Preventing and Addressing ACEs and Toxic Stress

Primary Prevention

Targets individuals without exposure to ACEs to prevent ACEs from ever occurring and increases protective or buffering factors, should exposure to ACEs and other adversities occur, including preventing intergenerational transmission of ACEs and toxic stress. Healthcare providers have an essential role in primary prevention by providing universal trauma-informed care, patient education, anticipatory guidance, and important linkages to cross-sector partners. Healthcare leaders also play an important role in advocating for trauma-informed systems and effective referral networks (such as in schools, justice, social services, early childhood, and public health programs).

Secondary Prevention

Facilitates early detection through routine screening with the goal of exploiting the latency between exposure (as to ACEs) and the development of the toxic stress response. Secondary prevention aims to prevent the development of the toxic stress response by applying buffering interventions.

Tertiary Prevention

Targets individuals who have experienced ACEs and have developed consequences of toxic stress, such as earlier-onset or more severe AAHCs. Treatment to address the prolonged activation of the stress response and concomitant disruptions in neuro-endocrine-immune-metabolic and genetic regulatory systems may be a necessary adjunct to usual care for AAHCs.



Primary Prevention

Trauma-informed care is beneficial for all patients but especially those with a history of adversity. Key principles include:²⁰

1. Establishing physical and emotional safety of patients and staff;
2. Building trust between providers and patients;
3. Recognizing signs and symptoms of trauma exposure in physical and mental health;
4. Promoting patient-centered, evidence-based care;
5. Ensuring provider and patient collaboration by bringing patients into the treatment process and discussing mutually agreed-upon goals for treatment; and
6. Providing care that is sensitive to the patient's racial, ethnic, and cultural background, and gender identity.

High-quality, affordable care that is culturally and linguistically sensitive²¹ is essential.

Within the healthcare setting, prevention of ACEs requires:

Patient education about ACEs and toxic stress coupled with promotion of **safe, stable, and nurturing relationships and environments**, anticipatory guidance, and linkages, resources, or referrals that focus on:^{19,22,23}

- » Optimizing social-emotional and other learning at home, such as through Talk, Read, Sing²⁴ or Reach Out and Read;²⁵
- » Promoting healthy relationship norms;
- » Parenting and family relationship skill-building;
- » Connecting youth to caring adults and activities;
- » Linkages to high-quality home visitation and/or child care;
- » Preschool and school enrichment with family engagement;
- » Economic supports, such as links to Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and tax credit programs; and
- » Legal supports, such as through medical-legal partnerships.²⁶



Secondary Prevention

Universal, primary-care-based screening for ACEs, beginning during prenatal care or newborn well-child care and continuing through adulthood, is an important means to identify and intervene for those at risk for toxic stress.

- ▶ ***ACE screening involves assessing for the triad of adversity (ACE score), clinical manifestations of toxic stress (ACE-Associated Health Conditions, AAHCs), and protective factors to assess clinical risk for toxic stress and to guide effective responses.*²⁷**
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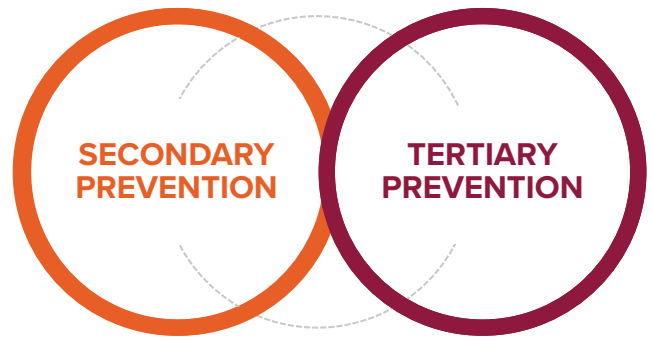
This approach meets the Wilson and Jungner criteria for optimal screening efforts as promoted by the World Health Organization.²⁸ One of the most important of these criteria is the presence of a latent or early symptomatic stage, during which time interventions are most effective and cost-efficient.

- Assessment for AAHCs should include not only mental and behavioral conditions, but also non-neuropsychiatric conditions (for which the links between toxic stress and health may be under-recognized).²⁹



Joint Healthcare Strategies

For both Secondary and Tertiary Prevention



Clinical response to identification of ACEs and increased risk of toxic stress should include:

1. Applying principles of **trauma-informed care**, such as establishing trust, safety, and collaborative decision-making.
2. Supplementing usual care for **AAHCs** by providing **patient education** on toxic stress and offering strategies to help regulate the stress response, including:^{19,30-32}



**HIGH-QUALITY,
SUFFICIENT SLEEP**



**BALANCED
NUTRITION**



**REGULAR
PHYSICAL ACTIVITY**



**MINDFULNESS
AND MEDITATION**



**SUPPORTIVE
RELATIONSHIPS**

including with caregivers
(for children),
family members, and peers



**ACCESS
TO NATURE**



**MENTAL
HEALTHCARE**

including psychotherapy or
psychiatric care, and substance use
disorder treatment, when indicated

3. Validating existing **strengths and protective factors**.
4. **Referrals** to patient resources or interventions, such as educational materials, social work, school agencies, care coordination or patient navigation, and community health workers.
5. **Follow up** as necessary, using the presenting AAHCs as indicators of treatment progress.



For more detail and information, read *Roadmap for Resilience: The California Surgeon General's Report on Adverse Childhood Experiences, Toxic Stress, and Health* at <https://osg.ca.gov/>

Investment in research is necessary to advance the science to prevent, measure, and treat the effects of toxic stress in children and adults. Clinical diagnostic criteria for toxic stress, viable biomarkers for diagnosis and monitoring treatment efficacy, and therapeutic targets for interrupting the toxic stress response are imperative for improving quality and efficacy of care. Treatment guidelines for addressing the role of toxic stress in specific AAHCs (such as asthma and heart disease) are called for.

References

1. Felitti VJ, Anda RF, 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. *American Journal of Preventive Medicine* 1998; **14**(4): 245-58.
2. Dube SR, Felitti VJ, Dong M, Giles WH, Anda RF. The impact of Adverse Childhood Experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventive Medicine* 2003; **37**(3): 268-77.
3. Anda RF, Felitti VJ, Bremner JD, et al. The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience* 2006; **256**(3): 174-86.
4. Hughes K, Bellis MA, Hardcastle KA, et al. The effect of multiple Adverse Childhood Experiences on health: A systematic review and meta-analysis. *Lancet Public Health* 2017; **2**(8): e356-e66.
5. Petruccelli K, Davis J, Berman T. Adverse Childhood Experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect* 2019; **97**: 104127.
6. Brown DW, Anda RF, Tiemeier H, et al. Adverse Childhood Experiences and the risk of premature mortality. *American Journal of Preventive Medicine* 2009; **37**(5): 389-96.
7. Merrick MT, Ford DC, Ports KA, et al. Vital signs: Estimated proportion of adult health problems attributable to adverse childhood experiences and implications for prevention—25 states, 2015-2017. *Morbidity and Mortality Weekly Report* 2019; **68**(44).
8. Waehrer GM, Miller TR, Silverio Marques SC, Oh DL, Burke Harris N. Disease burden of adverse childhood experiences across 14 states. *PLoS One* 2020; **15**(1): e0226134.
9. Centers for Disease Control and Prevention. Ten leading causes of death and injury. 2017. <https://www.cdc.gov/injury/wisqars/LeadingCauses.html> (accessed September 25, 2020).
10. Bellis MA, Hughes K, Ford K, Ramos Rodriguez G, Sethi D, Passmore J. Life course health consequences and associated annual costs of adverse childhood experiences across Europe and North America: A systematic review and meta-analysis. *Lancet Public Health* 2019; **4**(10): e517-e28.



11. Miller TR, Waehrer GM, Oh DL, et al. Adult health burden and costs in California during 2013 associated with prior adverse childhood experiences. *PLoS One* 2020; **15**(1): e0228019.
12. Bucci M, Marques SS, Oh D, Harris NB. Toxic stress in children and adolescents. *Advances in Pediatrics* 2016; **63**(1): 403-28.
13. Garner AS, Shonkoff JP, 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-e31.
14. 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-e46.
15. Johnson SB, Riley AW, Granger DA, Riis J. The science of early life toxic stress for pediatric practice and advocacy. *Pediatrics* 2013; **131**(2): 319-27.
16. Miller GE, Chen E, Parker KJ. Psychological stress in childhood and susceptibility to the chronic diseases of aging: Moving toward a model of behavioral and biological mechanisms. *Psychological Bulletin* 2011; **137**(6): 959-97.
17. McEwen BS. Protective and damaging effects of stress mediators. *New England Journal of Medicine* 1998; **338**(3): 171-9.
18. Danese A, McEwen BS. Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior* 2012; **106**(1): 29-39.
19. National Academies of Sciences, Engineering, and Medicine. Vibrant and healthy kids: Aligning science, practice, and policy to advance health equity. Washington, DC: National Academies Press, 2019.
20. ACEs Aware. Trauma-informed care overview, provider toolkit. 2020. <https://www.acesaware.org/wp-content/uploads/2020/05/Provider-Toolkit-Trauma-Informed-Care-Overview.pdf> (accessed September 25, 2020).
21. Trent M, Dooley DG, Dougé J. The impact of racism on child and adolescent health. *Pediatrics* 2019; **144**(2): e20191765.
22. National Center for Injury Prevention and Control. 2020. <https://www.cdc.gov/violenceprevention/pdf/essentials-for-childhood-framework508.pdf> (accessed September 23, 2020).
23. Centers for Disease Control and Prevention. Preventing Adverse Childhood Experiences: Leveraging the best available evidence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2019.



24. LoRe D, Ladner P, Suskind D. Talk, Read, Sing: Early language exposure as an overlooked social determinant of health. *Pediatrics* 2018; **142**(3): e20182007.
25. Zuckerman B, Needlman R. 30 years of Reach Out and Read: Need for a developmental perspective. *Pediatrics* 2020; **145**(6): e20191958.
26. Center for the Study of Social Policy. DULCE: Creating family-centered, equitable access to critical supports. 2020. <https://cssp.org/our-work/project/dulce/> (accessed October, 1 2020).
27. Lieberman A, Dimmler, MH, Ghosh Ippen, CM. Child-Parent Psychotherapy: A trauma-informed treatment for young children and their caregivers. In: Zeanah C, ed. Handbook of infant mental health. 4th ed. New York: Guilford Press, 2019: 485-99.
28. Wilson JMG, Jungner G, World Health Organization. Principles and practice of screening for disease. World Health Organisation, 1968.
29. Oh DL, Jerman P, Purewal Boparai SK, et al. Review of tools for measuring exposure to adversity in children and adolescents. *Journal of Pediatric Health Care* 2018; **32**(6): 564-83.
30. ACEs Aware. Clinical assessment and treatment planning. 2020. <https://www.acesaware.org/treat/clinical-assessment-treatment-planning/> (accessed March 12, 2020).
31. Purewal Boparai SK, Au V, Koita K, et al. Ameliorating the biological impacts of childhood adversity: A review of intervention programs. *Child Abuse & Neglect* 2018; **81**: 82-105.
32. Gilgoff R, Singh L, Koita K, Gentile B, Marques SS. Adverse childhood experiences, outcomes, and interventions. *Pediatric Clinics* 2020; **67**(2): 259-73.
33. ACEs Aware. 2020. <https://www.acesaware.org/> (accessed March 12, 2020).

