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Clinical Response to ACEs and Toxic Stress

This fact sheet explains how to apply the science of toxic stress to improve patient health; presents the ACE Screening Workflows, Risk Assessment and Treatment Algorithms, and ACE-Associated Health Conditions; and provides an overview of the clinical response to ACEs and toxic stress.

Applying the Science of Toxic Stress to Improve Patient Health

Early Identification and Intervention Help

It is well established that early identification and intervention are key to ameliorating the impacts of toxic stress and reducing the risk of negative health and social outcomes (ACE-Associated Health Conditions). See the "ACEs Aware Initiative: Overview" fact sheet for more information.

ACE-Associated Health Conditions include cardiovascular, pulmonary, immune, metabolic, mental health, and substance use conditions. While the relationship between ACEs and mental health outcomes is most commonly recognized, a recent meta-analysis demonstrates that the single greatest driver of ACE-associated health care costs is cardiovascular disease.[24]

ACEs and Toxic Risk Assessment Guide Evidence-Based Assessment

Rigorous investigation is currently underway to aid in establishing clinical diagnostic criteria and standardized biomarkers for defining and prognosticating about toxic stress risk. While this research is underway,

the **ACEs and Toxic Stress Risk Assessment Algorithms** help providers assess whether a patient is at low, intermediate, or high risk for having a toxic stress physiology.

The algorithm's toxic stress risk assessment is based on a combination of the ACE score and the presence or absence of ACE-Associated Health Conditions.

Treatment Strategy

The treatment strategy consists of education to help patients recognize and respond to the role that past or present stressors may be playing in their current health conditions and addressing toxic stress physiology as a core component of treating ACE-Associated Health Conditions.

For both children and adults, addressing current stressors, increasing the total dose of buffering and protective factors such as safe, stable, and nurturing relationships and environments are associated with decreased metabolic, immunologic, neuroendocrine, and inflammatory dysregulation, and improved physical and psychological health.

Even when treatment comes later in life, it is known that for individuals with ACEs, addressing the resulting toxic stress physiology is important for improving ACE-Associated Health Conditions, as well for averting future consequences.

Implementation Studies

A variety of primary care implementation studies have established the feasibility and utility of ACE screening and treatment in pediatrics,[2-7] maternity care,[8,9] family practice,[10] and internal medicine.[11-13] **These implementation studies have found that ACE screening usually adds less than five minutes to the visit, is acceptable to both patients and providers, and is associated with improved patient satisfaction and healthcare utilization.**[2,14,15] Specifically, education about the relationship between adversity and health is appreciated by patients, increases trust in the provider, and improves the relationship quality. Screening is also welcomed by patients as a bridge to needed services.

Adverse Childhood Experiences (ACEs) and Toxic Stress Risk Assessment Algorithm

Pediatrics

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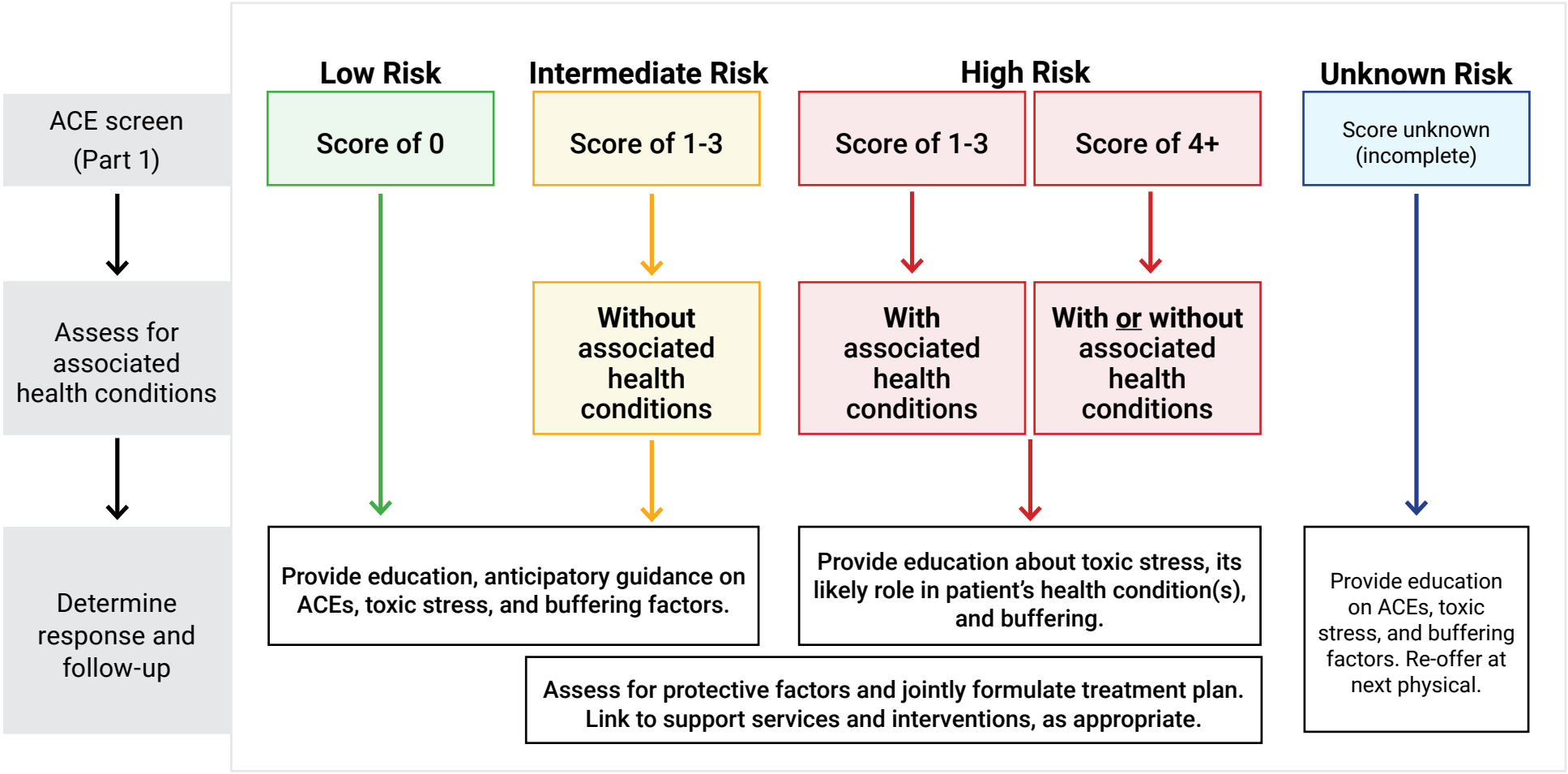

This algorithm pertains to the ACE score (Part 1 of PEARLS), whose associations with health conditions are most precisely known. Social determinants of health (Part 2 of PEARLS) may also increase risk for a toxic stress response and should be addressed with appropriate services, but should NOT be added to the ACE score for this algorithm. Partial completion may indicate discomfort or lack of understanding. If partial response indicates patient is at intermediate or high risk, follow the guidelines for that category.

If the ACE score is 0, the patient is at "low risk" for toxic stress. The provider should offer education on the impact of ACEs and other adversities on health and development as well as on buffering factors and interventions. If the ACE score is 1-3 without ACE-Associated Health Conditions, the patient is at "intermediate risk" for toxic stress. If the ACE score is 1-3 and the patient has at least one ACE-Associated Health Condition, or if the ACE score is 4 or higher, the patient is at "high risk" for toxic stress. In both cases, the provider should offer education on how ACEs may lead to toxic stress and ACE-Associated Health Conditions, as well as practices and interventions demonstrated to buffer the toxic stress response, such as sleep, exercise, nutrition, mindfulness, mental health, and healthy relationships. The provider should also assess for protective factors, jointly formulate a treatment plan, and link to supportive services and interventions, as appropriate.

Adverse Childhood Experiences (ACEs) and Toxic Stress Risk Assessment Algorithm

Adults

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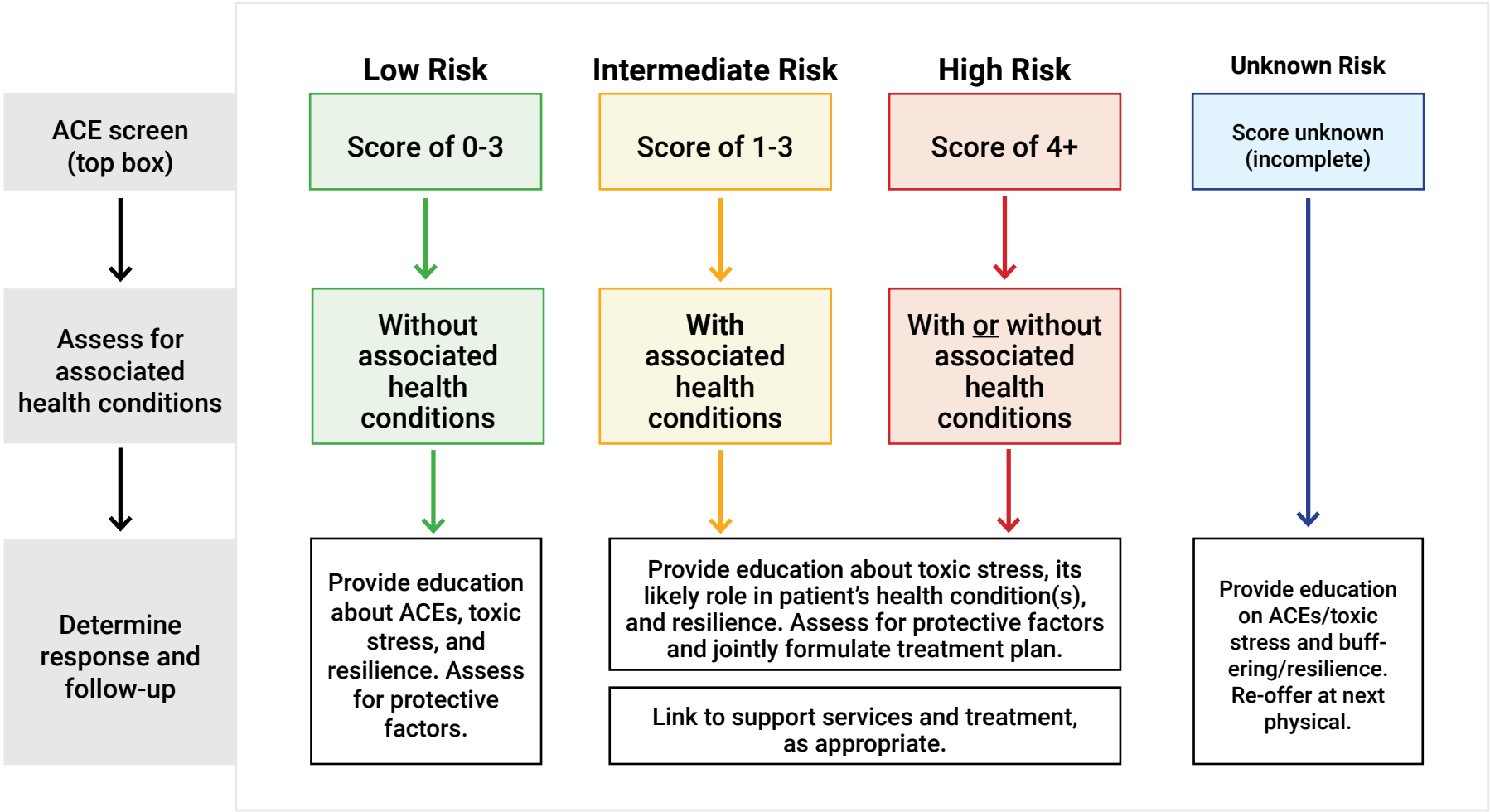

Partial completion may indicate discomfort or lack of understanding. If partial response indicates patient is at intermediate or high risk, follow the guidelines for that category.

If the ACE score is 0-3 without ACE-Associated Health Conditions, the patient is at "low risk" for toxic stress physiology. The provider should offer education on the impact of ACEs and other adversities on health (including reviewing patient's self-assessment of ACEs' impact on health), buffering/protective factors, and interventions that can mitigate health risks. If the ACE score is 1-3 with ACE-Associated Health Conditions, the patient is at "intermediate risk." If the score is 4 or higher, even without ACE-Associated Health Conditions, the patient is at "high risk" for toxic stress physiology. In both cases, the provider should offer education on how ACEs may lead to a toxic stress response and ACE-Associated Health Conditions, as well as practices and interventions demonstrated to buffer the toxic stress response, such as sleep, exercise, nutrition, mindfulness, mental health, and healthy relationships. The provider should also assess for protective factors, jointly formulate a treatment plan and link to supportive services and interventions, as appropriate.

Overview of the Clinical Response

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

1. Applying principles of **trauma-informed care**, including establishing trust, safety, and collaborative decision-making
2. **Identification and treatment of ACE-Associated Health Conditions** by supplementing usual care with **patient education** on toxic stress and strategies to regulate the stress response, including:
   a. Supportive relationships, including with caregivers (for children), other family members, and peers
   b. High-quality, sufficient sleep
   c. Balanced nutrition
   d. Regular physical activity
   e. Mindfulness and meditation
   f. Mental health care, including psychotherapy or psychiatric care, and substance use disorder treatment, when indicated
3. Validation of **existing strengths and protective factors**
4. **Referral to needed patient resources or interventions**, such as educational materials, social work, care coordination or patient navigation, community health workers, as well as the six pillars listed above

Follow up as necessary, using the presenting ACE-Associated Health Condition(s) as indicators of treatment progress

For information on the clinical response to ACEs and toxic stress, visit **ACEsAware.org/assessment-and-treatment**.

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Visit **ACEsAware.org** and join us as we launch a movement — led by the Office of the California Surgeon General and the California Department of Health Care Services — to ensure everyone is ACEs Aware.

5/5/20