

# **Adverse Childhood Experiences: Healing and Health**

## **Next Steps White Paper**

**DRAFT – 10/02/13**

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# **ACEs: Healing and Health**

## **AVA/NHCVA Next Steps White Paper**

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# Section 1

## Introduction and Overview

There is growing scientific evidence that adverse childhood experiences are important contributors to health problems across the lifespan. With this increasing knowledge about the relationship between adverse childhood experiences (ACEs) and illness, there is also an increasing interest by health providers, healthcare institutions and funders in how best to identify and address these experiences in patients. The purpose of this white paper is to help answer those questions by briefly describing the:

- growing evidence for the relationship between ACEs and health
- role of resilience and other mitigating factors
- existing evidence and best-practices regarding identification and effective treatments to address ACEs
- promising clinical approaches for patients who have illness and symptoms that appear related to ACEs
- education and training needed by clinicians to provide trauma-informed care for patients whose health problems may be related to ACEs
- quality improvement efforts and research needed to advance knowledge and to improve care for patients whose health problems may be related to ACEs

This paper is the product of collaboration between the [Academy on Violence and Abuse](#) (AVA), a membership organization for health professionals and educators focused on improving knowledge, education and practice related to exposures to violence and abuse, and the [National Health Collaborative on Violence and Abuse](#) (NHCVA), an organization of 30 health professional societies and other concerned healthcare organizations whose mission is to inform public policy regarding violence, abuse and health.

Our hope is that this paper will facilitate an ongoing discussion and promote needed attention and resources to promote prevention, early recognition and effective treatment of the harms associated with adverse childhood experiences.

## Section 2

# Adverse Childhood Experiences and Long-Term Health

Robert Anda, Vincent J. Felitti, and David L. Corwin

Violence, abuse (1) and other toxic stressors (2,3) during childhood are strongly associated with many of the most serious diseases, disorders and social problems yet most health providers are ill equipped by their training to help prevent, identify and to intervene early in the development of these harms. The list of diseases, disorders and problems that show increased rates among victims of violence and abuse include: anxiety disorders, chronic pain disorders, cigarette smoking, depression, diabetes, drug and alcohol use disorders, gastrointestinal disease, headache, heart disease, interpersonal and marital discord, intravenous drug use, learning disabilities, lung disease, neurological symptoms and disorders, obesity, sexual promiscuity and sexually transmitted diseases, suicide and suicide attempts, violence and vocational instability. The cost to our health care system and society for these preventable sequelae is staggering.

The [Adverse Childhood Experiences \(ACE\) Study](#) is a landmark research study focusing on the role of childhood adversity, including violence and abuse and their relationship to long term health. (4) The ACE Study is an ongoing collaboration between the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente that comprehensively describes the effects of 10 categories of adverse childhood experiences (ACEs) including all forms of child abuse, neglect and intimate partner violence on health and social well-being throughout the lifespan. Study participants include 17,000, middle class adults from the Kaiser Health Plan in San Diego, CA. [Over 70 publications](#) describing both retrospective and prospective analyses of this large study cohort repeatedly demonstrate that:

- ACEs are common.
- ACEs are highly interrelated and often occur together.
- The ACE Score is the number of *categories* of ACEs.
- The ACE Score has strong and graded relationship to numerous health and social problems as listed above.
- The synergistic stressor effect of ACEs on human development throughout the lifespan shows that ACEs, including violence and abuse, are major determinants of health. Higher ACE Score individuals acknowledge increased incidence of addiction, mental illness, social

malfunction, health care utilization, chronic diseases, prescription medication use and premature mortality. (5)

Depression and diabetes are two of the most serious and costly diseases throughout the world today. The World Health Organization has standardized ACE questions for use in multiple countries. As a result, public health surveillance efforts are beginning to document the national and global burden of ACEs. (6) A recent study of ACEs in the Netherlands shows that ACEs are associated with a higher burden of disease than all non-ACE related common mental disorders combined. (7) The pervasive influence of ACEs is now recognized as a serious international health and social problem. There are a growing number of studies providing additional support to the validity and importance of the ACE Study. (Powerpoint from Brooks Keeshin, MD: [ACEsResearchFindings.pptx](#))

The AVA has produced a 4.5 hour DVD on the ACE Study which includes plenary addresses by Drs. Felitti and Anda along with commentary by Frank Putnam, MD describing the significance and impact of the ACE Study upon the field addressing childhood trauma. That DVD also includes interviews with Drs. Felitti and Anda along with David Williamson, PhD, the CDC epidemiologist who introduced them initiating the collaboration which became the ACE Study. The DVD is useful for educating students, health professionals, policy makers and the public about the ACE Study and its significance for improving the health and well-being of all people around the world. A brief preview of the DVD can be viewed at [www.AVAHealth.org](http://www.AVAHealth.org) with information on how to obtain it.

## References and Resources

- (1) [Adverse Childhood Experiences: Looking at how ACEs affect our lives & society](#). CDC infographic.
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## Section 3

# Biological Impacts of ACEs

Andrea Danese, Michael D. De Bellis, and Martin H. Teicher

Adverse psychosocial experiences in childhood impact later mental and physical health.<sup>1,2</sup> Current evidence suggests that the 'biological embedding' of adverse childhood experiences may be explained by changes in three key systems that sensitive to psychological stress, namely the brain, the endocrine and the immune systems.<sup>3,4</sup> Experimental research showed that mice exposed to early life stress undergo biochemical changes in their genetic material, which result in abnormal expression of key genes regulating the biological response to stress.<sup>5</sup> Through these epigenetic changes, the developing child could modify his or her biological response to stress to maximize adaptation to the current environment. For example, a threatening and unpredictable environment will be associated with hyperactive stress response. Although this might ensure greater adaptation to the immediate environment, the hyperactive stress response may also carry a burden for disease during child development and beyond.

### Endocrine and Immune Systems

In conditions of acute psychosocial stress, the secretion of glucocorticoid hormones (e.g., cortisol) and their systemic effects mediated by the glucocorticoid receptor are vital to increase energy provision in the face of adversities. Mice exposed to early life stress exhibit epigenetic changes leading to reduced functioning of the glucocorticoid receptor.<sup>6</sup> Consistent with evidence in animal models, maltreated children show chronic elevation in cortisol levels,<sup>7</sup> possibly to compensate for the impaired functioning of the glucocorticoid receptor (see below). Although elevated cortisol elevation might be adaptive in the short-term to support increased bodily demands under conditions of threat, chronic elevation in cortisol levels may become detrimental to health.<sup>8</sup>

Insufficient glucocorticoid functioning has important implications for the developing immune system. Because glucocorticoid hormones are potent anti-inflammatory compounds, attenuation of their effect may impair regulation of the inflammatory response. Consistent with impaired functioning of the glucocorticoid receptor, children and adults exposed to early maltreatment show elevated inflammation levels.<sup>9,10</sup> Elevated inflammation levels may be adaptive in the short-term to potentiate stress-induced immune response - should the threat be followed by physical injury. However, chronic elevation in inflammation levels contribute to the pathophysiology of several chronic conditions, such as

cardiovascular disease or type-2 diabetes. <sup>11,12</sup> Abnormal endocrine and immune functioning in children exposed to adverse childhood experiences may impact on brain development, with important implications for mental health.

## **Brain Structure and Function**

There is a growing body of reproducible findings in child victims of maltreatment and adults who were maltreated as children linking childhood maltreatment to structural and functional brain differences (13) Smaller brain volumes, smaller midsagittal areas of the corpus callosum, and functional alterations in the neocortex, visual and auditory cortex have been observed in maltreatment survivors. Adverse brain development is seen in maltreated children and adolescents with posttraumatic stress disorder (PTSD) and other psychopathology (14,15). However, alterations in the prefrontal cortex of maltreated children are also seen in maltreated children without any DSM-IV Axis I disorders (16). Furthermore, in these findings gender differences were noted as neurostructural alterations in maltreated girls were in brain regions involved in emotion regulation, whereas in maltreated boys, the affected brain regions were those involved in impulse control.

In addition to gender differences, there appear to be specific windows of vulnerability during brain maturation called stress sensitive periods where brain regions are maximally susceptible to the effects of stress because these regions are undergoing active maturation and are thus more susceptible to the negative effects of overwhelming stress. Thus, the data to date strongly suggest that child maltreatment is associated with alterations in brain regions that may have profound negative effects on executive function, attention, memory, and visual-spatial function. (17) These deficits can impair day to day function and lead to lower levels of function in victims of maltreatment. However, the neurobiology of child maltreatment in humans is a new field of study. We do not know what changes are adaptive and what changes will result in long term disease. We also do not know if treatment of stress related illnesses will improve brain structure and function. In order to help victims of child maltreatment, longitudinal studies are needed to address these important issues.

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## Section 4

# Increasing Resilience: Primary Healthcare Providers' Opportunities to Promote Protective Factors Before and After Childhood Trauma

Machelle D. Madsen Thompson and Bart Kilka

Life-span research (1,2,3) reveals that many children, despite experiencing Adverse Childhood Experiences (ACEs) including violent trauma and neglect (4), are able to move towards recovery, resulting in pre-ACE functional status. This *resilience* does not transpire in isolation, but is supported by a composite of phenomena which empower a child to return to functional status following an ACE. It is observed when a child is immersed in the increasingly positive influence of protective factors and lessened presence of risk factors within the individual child and his or her environment. *Protective factors* are positive qualities located within the cognitive, emotional, environmental, social, and spiritual experience of the child that are associated with resilience and, when combined, facilitate resilience. These modifiable factors work cumulatively to empower and support the child so that she or he may avoid or successfully work through negative outcomes associated with ACEs (5).

Primary healthcare providers can play important roles in the prevention of ACEs and the ultimate promotion of resilience. Successful prevention of ACEs requires an integrated system of care which includes activities and interventions across disciplines and across the ecological prevention spectrum (6). Primary healthcare providers can initiate universal screening for ACEs with all of their patients. Screening of both children and parents allows healthcare providers to identify patients who may have elevated risk for poor physical and/or psychosocial outcomes due to a high ACE score but who may not be currently exhibiting any significant impairment (secondary prevention). Screening for ACEs can also assist healthcare providers in identifying patients who are experiencing significant impairments due to exposure to ACEs. For these patients, healthcare providers can provide targeted referrals to address the impacts of the ACEs (tertiary prevention).

Assessment of ACEs however, only represents one side of the prevention coin. As healthcare providers work to identify and lessen the number and impacts of ACEs, they must also begin to understand the current and potential

sources of protection which can foster resilience for all of their patients. Identifying the presence or absence of protective factors through universal screening, allows healthcare providers to make targeted referrals to address deficiencies in protective factors. In this way, healthcare providers contribute to the promotion of safe, stable, and nurturing relationships and environments for all children and families (7).

A review of over 200 research articles coupled with narratives of over 350 adults and children (5) demonstrate that several important protective factors are known to help a child following maltreatment related ACEs. (8,9,10). Each protective factor listed below contains links to practitioner information, handouts, and real world implementation for children and families affected by or at risk for ACEs. (11)

- 1) *Self Value*: Child's emotional and behavioral self expressions are positive, accurate, and constructive. (12,13)
- 2) *Self Regulation*: Child's emotional and behavioral self management works towards resolution of ACE rather than self-destructive or aggressive behavior. (14)
- 3) *Hope/Future Goal Setting*: Child exhibits positive expectations and goals about life and future outcomes. (15)
- 4) *Problem Solving*: Child demonstrates ability to find unique solutions to difficult situations. (16)
- 5) *Supportive Belief Structure*: Child holds personal beliefs and practices which give support & meaning to life beyond the material or worldly. (17)
- 6) *Friends*: Child shows the presence and maintenance of constructive mutual friendships. (18)
- 7) *Family*: Child's family provides stable care including meeting the child's survival, health, mental health, and emotional needs by at least one adult caregiver. (19,20,21)
- 8) *Supported Academic Functioning*: Child receives support in efforts to work consistently at his or her ability level and to attain educational goals. (22,23)
- 9) *Active Diversion*: Child is involved in positive activities in the community, school, and/or home. (24)
- 10) *Supportive Community*: The area in which a child lives is a secure place to obtain resources. (25)
- 11) *Safety/Fewer and less severe stressors*: Child's well being and security is promoted across ecological settings. (26)

Resilience, thought of in terms of achievable protective factors, allows a practitioner to easily recommend real solutions for families affected by ACEs. Pediatricians, family physicians, and other primary care providers who see children and families can encourage children to engage in both professional services and resources already available in the child's natural environment. Obstetricians, family practitioners, and nurse midwives can encourage expecting mothers to begin accessing positive support structures for herself and the unborn

child as prevention tools should ACEs occur. By assessing and reinforcing existing strengths and encouraging implementation of protective factors in weaker areas as families meet challenges, These primary care providers can, through referrals, encourage implementing protective factors. In these and many other ways, real changes can begin outside the confines of treatment facilities.

By implementing multifaceted real world strategies, programs, and resources (27), primary healthcare providers can influence the maximization of protective factors in children and adolescents across multiple levels of prevention and treatment. These children and adolescents then become more likely to demonstrate the effects of resilience across the lifespan; growing up in a life which is less encumbered by major psychological and stress induced physical health problems, enhanced by positive long-term relationships, and connected to society through successful careers and positive parenting despite ACEs (28).

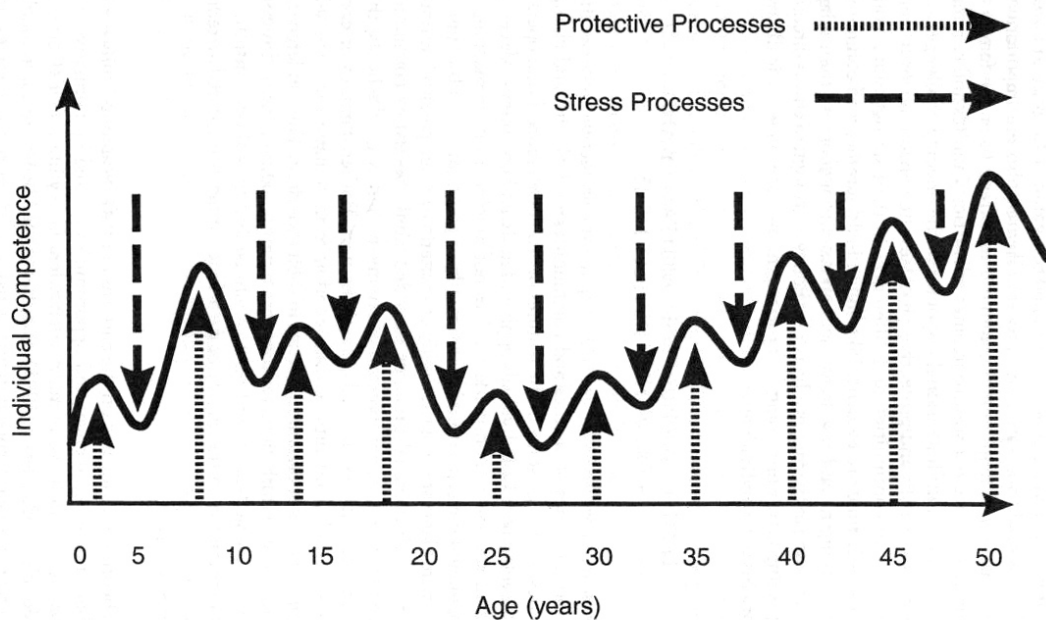


Figure 2.1. Interplay of protective and stress processes and their influence on individual competence across the life span.

(29)

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ATTRIBUTION]**

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## Section 5

# The Cost of Adverse Childhood Experiences

Ruth Gerson and David L. Corwin

Stopping the abuse and maltreatment of children carries an inherent moral imperative, but there is another reason to focus on preventing maltreatment. Child abuse brings with it a massive economic burden, partially due to the costs of intervention but predominantly stemming from the immediate and long-term impact on physical and emotional health and functioning. Many have recoiled at the idea of wanting to put a monetary value on a child's suffering, which has limited the research done in this area. But mounting evidence described below makes clear the profound economic cost of ACEs and underscores the financial, as well as the moral, imperative of effective prevention and treatment.

The Centers for Disease Control and Prevention (CDC) has estimated that the economic toll associated with child maltreatment is between \$124 and \$585 billion across the lifetime (1). Why the fourfold range in this estimate? To understand the range in these numbers, it is necessary to understand how such numbers are reached.

Research into the costs associated with adverse childhood experiences can take different forms. Some studies look at cost per case, others per year (and within these, some examining cost per new case per year, and others taking a prevalence approach). Some look at all forms of ACEs, others at only physical or sexual abuse (not emotional abuse, neglect, exposure to domestic violence or parental drug use, or others).

Perhaps the most important methodological difference in this research is the estimation of the number of children affected by maltreatment and other ACEs. The CDC's first estimate of \$124 billion is the most conservative one – the minimum cost that can be assumed – in that it looked only at *confirmed* child maltreatment cases occurring in one year, to then estimate the lifetime cost for each victim of maltreatment.

Confirmed cases of child maltreatment are those for which child protective services has investigated and found sufficient credible evidence (including physical evidence and interviews) to declare that the abuse did occur. Unfortunately in many cases of child maltreatment, there is not physical evidence of abuse (particularly in cases of sexual or emotional abuse), the child is shamed or pressured into recanting their report, or for whatever other reason there is not

sufficient evidence even if the abuse did occur. Thus reports including confirmed cases only likely vastly underestimate the true prevalence of child maltreatment (2).

When the CDC report's authors included all new reports of child maltreatment (not just substantiated cases), and included those ascertained in the National Incidence Survey (and not included in the child protective services' report), the incidence of maltreatment more than doubled. This leads us to the more accurate total cost estimate of \$585 billion.

What makes up this massive number? While child protective services and child welfare services are often a target for cuts in times of recession, the actual lifetime expenditures on these services are tiny – only \$7,728 per case over the lifetime, for a total of just under \$4.5 billion -- compared to the overall economic burden of child maltreatment.

While children who have experienced maltreatment and other childhood traumas are at increased risk for needing special education services, this is also an extremely small contribution to the total, at \$7,999 per case over the lifetime for a total of \$4.6 billion. Similarly, children who have been abused are more likely to enter the criminal justice system; here again though, the cost is comparatively tiny, at \$6,747 per case over the lifetime for a total of \$3.9 billion.

The biggest contributors to the cost of child maltreatment are lost productivity and health care costs. The biggest productivity loss is related to death due to maltreatment. The CDC study estimated that almost 1800 children in the US died from abuse or neglect in 2008; other studies have shown similar results (3). The vast majority of these deaths occur in children aged 0-4. The economic productivity loss for each case of fatal child abuse is \$1.2 billion. And for non-fatal cases, the productivity loss is significant as well. Adults who have been abused or experienced other trauma as children are more likely to be unemployed or underemployed, are more likely to miss multiple days of work due to medical or psychiatric illness, and have a shorter life expectancy – by as much as 20 years – which further decreases their economic contribution to society. Estimates of the lost productivity due to child maltreatment (nonfatal cases) is \$144,360 per case or more than \$80 billion in total.

Short- and long-term medical costs are the other major component of the economic burden of child maltreatment. The CDC study reports short-term (during childhood) health care costs of \$32,648 per case. This includes costs related to both medical interventions for trauma, fractures, malnutrition and medical neglect, as well as treatment of post-traumatic psychiatric illnesses such as PTSD and depression, for a total cost of almost \$19 billion over the lifetime.

Long-term medical costs in the CDC study were assessed from age 18-64, at a lifetime cost rate of \$10,530 per victim of maltreatment. The findings from the

[ACE Study](#) suggests that the true long-term medical costs, including other ACEs beyond physical and sexual abuse and neglect, are much higher.

A study in the Netherlands using a large population cohort (aged 18-65) examined the impact of maltreatment as well as psychological abuse, emotional neglect, parental depression/anxiety, parental substance use, and other disruptive early life events including death of a parent and divorce (4). This study found that psychological abuse had the greatest impact on later disability, followed by other forms of maltreatment (physical or sexual abuse, emotional neglect), parental psychopathology, and other disruptive early life experiences, with each of these acting independently as a predictor of disability. This suggests that if the cost of other ACEs were included, the estimations of long-term health costs would vastly increase.

The conclusion of the Netherlands study is that the burden of disease associated with ACEs was greater than all other common psychiatric disorders combined. (4) This is a remarkable statement given the World Health Organization finding that depression is the most costly disease in middle- to high-income countries around the world. (5)

A further critique of these studies is that all of them neglect the costs of ACEs after age 65. Individuals who have experienced childhood abuse and maltreatment are many times more likely to experience some of the most expensive medical illnesses in later adulthood, including heart disease, cancer, diabetes, severe obesity, emphysema/COPD, stroke, and other medical illnesses, not to mention psychiatric disability due to depression, alcohol or drug use, chronic PTSD, and other disorders. Studies that have included medical costs over age 65 have estimated an increase in long-term health care costs due to childhood maltreatment and violence could be anywhere from \$333 billion to \$750 billion annually (6).

If including the cost of healthcare over age 65 adds \$300 billion (a conservative estimate) to the cost of child maltreatment, that would suggest the CDC's \$585 billion estimate is too low, and that the true cost is at least \$885 billion.

Furthermore, even this higher estimate does not include the costs of other ACEs beyond child maltreatment (childhood exposure to domestic violence, neglect, parental substance abuse, and other ACEs are often left out of child abuse studies), or the costs of other consequences of childhood violence exposure such as future homelessness (7).

Finally, these estimates do not include the economic impact on the next generation. Those who have experienced abuse or trauma in childhood are more likely to become teenage mothers, to deliver prematurely, and to engage in poor parenting behaviors, all of which pass on negative consequences

(psychologically, medically, and economically) to their children (8). When these additional costs are taken into consideration, the total economic burden of child maltreatment in this country is likely to be over \$1 trillion.

Further research is needed to clarify these additional costs and to elucidate the specific versus cumulative costs of different maltreatment experiences and other ACEs. But these data make clear the massive economic burden of childhood adversity and the economic imperative for effective prevention and intervention efforts.

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## Section 6

# Screening and Case Finding for Adverse Childhood Experiences

Annie Lewis-O'Connor, Nadine Burke-Harris, and Susan Hadley

### Relevance

Incidence and prevalence studies show a strong correlation between [adverse child experiences \(ACEs\) and long-term health outcomes](#).<sup>1</sup> Screening and case finding for ACEs are designed to uncover past experiences of child maltreatment and other risk factors for toxic stress that occur in childhood and may provide opportunity for intervention and support that may otherwise be overlooked or misinformed. Data from the ACE Study and similar research suggests that one important way to help understand an adult's health is to understand their ACEs exposure.

The ACE score is the total number of categories from a list of 10 major adverse experiences during childhood and adolescence selected by the [ACE Study co-investigators](#). Identifying these exposures during a health care visit also enables health providers to consider the impact and context of these exposures upon the patient's current health as well as offering affirmation and an informed plan of care.

Screening or case finding for ACEs requires a change in practice and redefines how a health care provider takes a health history from patients. There are a number of promising programs worth highlighting. These programs incorporate screening for the ten adverse childhood experiences included in the ACE Study:

1. emotional/psychological abuse
2. physical abuse
3. sexual abuse
4. emotional neglect
5. physical neglect
6. mother treated violently
7. household substance abuse
8. household mental illness
9. growing up in a home with only one biological parent
10. growing up in a home where there was an incarcerated household member

Other significant childhood stressors are included in some of the newer instruments to assess major childhood stress. ([www.thechildrenstrust.org](http://www.thechildrenstrust.org)).

One program that is incorporating ACEs is that of Nadine Burke Harris, MD, a pediatrician in San Francisco. [Her work explores the relationship between ACEs, the health](#) and well-being of her young patients from a mostly low SES population. A retrospective chart review of 701 children with a mean age of 8.1 was conducted. Documentation of ACEs were coded using prior ACE criterion of a score of 1 for each category of traumatic event (range 0-9). The majority of subjects (67.2%, N=471) had experienced 1 or more categories of ACEs and 12% (N=84) had experienced 4 or more ACEs. Increased ACE scores strongly correlated with increased risk for learning/behavioral requirements and obesity. Early detection enables earlier interventions and may improve outcomes.

Researchers are also finding that events that occur during pregnancy (low birth weight babies, pre-eclampsia and gestational diabetes) pose risks to an adult's health later in life. Inquiry related to the women's reproductive years along with ACEs are important components for a comprehensive past medical history. **3,4** The [public health department in Port Townsend, WA](#), has incorporated ACEs screening into their family services, particularly asking pregnant women about their exposures. Screening for ACEs is now incorporated into assessments for all pregnant women in this clinic. Here is [an assessment of a group](#) of clients.

Annie Lewis-O'Connor NP, PHD, MPH, founder and director of the Women's CARE Clinic (Coordinated Approach to Recovery), a clinic for women who have experienced gender based violence in the context of intimate partner violence and sexual assault, reports that assessing for ACEs has been helpful for developing more a more informed plan of care for these patients. Prior to implementing ACEs screening, these care plans were often based on a single event of violence and failed to consider the broader context of the patients other traumatic life experiences, resulting in less well informed treatment plans. Using a quality improvement approach with ACEs as a quality measure, O'Connor found that seventy-two percent of the patients had at least one ACE and 23% had four ACEs.

Dr. Vincent Felitti, co-investigator of the [ACE Study](#), is currently working on the first version of the North American Health Index (NAHI). NAHI will be a uniquely comprehensive, Internet-based medical history questionnaire that patients can fill out and give to their provider. It contains biomedical, psychological, occupational, developmental, family, and trauma-oriented components. [Such tools and approaches seek to transform healthcare from symptom-reactive to a more individualized](#) and contextualized approach to clinical practice.

## **Approaches to Screening and Case Finding**

Computerized questionnaires emerged in the 1990's as means of assessing a patient's health history, medication history, and sexual and HIV risk history. **5,6,7,8** There has been much exploration of screening approaches relative to intimate partner violence (IPV). This body of literature can serve to inform us as we think about screening for ACEs. MacMillan and colleagues found in a randomized control trial that prevalence rates for IPV were dependent on the method used, the healthcare setting and the instrument used. Specifically, a significant interaction between method and instrument was found: Prevalence was lower on the written instrument. The face-to-face approach was least preferred by participants. **9** Lewis-O'Connor found similar findings in a pediatric setting. Mothers preferred the tablet format over the paper/pencil and face-to-face format. The questionnaire was completed during the visit and took 9 to 11 minutes to complete. **10**

In an emergency department study, comparing face-to-face interviews to tape recorded questionnaire with responses recorded on an answer sheet, there were no significant differences between the two methods of screening. **11** Bair-Merritt and colleagues used a randomized clinical trial in a pediatric emergency department and found that 50 (10%) of 497 participants reported IPV, 30 (11%) of 266 in the audiotape group and 20 (9%) of 231 in the written questionnaire group ( $p = .30$ ). Women in both groups preferred their given method over the idea of directly being asked. **12** These results support use of the alternative method studied as an alternative to direct questioning in that the indirect method yielded similar levels of disclosure and was preferred by some patients. Methods such as computer-based interviews and questionnaires appear reasonable for clinical use. Additional evaluation through quality improvement efforts and research is warranted.

In summary, collecting information about exposures to ACEs offers an opportunity to develop a plan of care for patients that is better informed, provides more context in relation to the patients' health histories, and strives to improve health outcomes and patient satisfaction. Best-practice guidelines for screening and case finding regarding ACEs and other toxic stressors are evolving. In assessing for ACEs, providers may use face-to-face, computer-based or questionnaires. These kinds of inquiries appear well tolerated and appreciated by many patients. Some healthcare providers like those cited above have integrated ACEs screening or case finding into their practice and have found this information helpful for care planning. More research is needed to determine if identifying and addressing ACEs earlier in life will affect health outcomes.

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## Section 7

# Evidence-Based Child and Adolescent Treatment

Brooks Keeshin, Erna Olafson and Judith Cohen

Although there is some evidence for the efficacy of other modalities(1), cognitive behavioral therapies demonstrate the greatest evidence base for the treatment of very young traumatized children with posttraumatic stress disorder (2) as well as older children with sexual abuse, exposure to domestic violence and poly-victimization related PTSD (3,4). In addition, cognitive behavioral therapies with a trauma component have been shown to be effective in traumatized children with non-PTSD related conditions such as behavioral problems (5), anxiety disorders (3) and depressive symptoms (6). With younger children, therapies that focus on enhancing the parent-child dyad such as Child Parent Psychotherapy and Parent Child Interaction Therapy have been demonstrated to be effective in children exposed to severe domestic violence (7) as well as multiple stressful life events (8) and physical abuse (9,10). School-based group therapies have successfully reduced symptoms of post-traumatic stress and depression (11) as well as improved academic performance (12) among violence-exposed children.

In children exposed to violence, there is a small but growing body of research that demonstrates that some interventions may be effective in either reducing the risk of future symptoms or in the prevention of subsequent abusive or violent experiences. Child Family Traumatic Stress Intervention has been demonstrated to be effective in reducing the risk of posttraumatic stress disorder among children exposed to accidental violence as well as sexually abused children (13). Parent Child Interaction Therapy has been demonstrated to be effective in reducing rates of recidivism for physically abusive parents (9,14) and enhancing parental sensitivity (15) among physically abused children. In addition, the use of standardized forensic interviews with abused children increases the probative information provided in a disclosure (16), thus enhancing the capacity of children's services and law enforcement to effectively protect the child from subsequent abuse.

For adolescents with complex trauma presentations following polyvictimization and/or polytraumatization exposure including war zones, evidence-based interventions and promising practices are available both for use for at risk youth still in the community and in residential treatment centers or juvenile justice facilities. They have been effective in improving behavior disorders, school performance, and post-traumatic and symptoms such as post-

traumatic stress disorder and depression and maladaptive grief reactions (17, 18, 19, 20).

Because research about assessment and treatment of traumatized children is developing rapidly, practitioners are also referred to [National Child Traumatic Stress Learning Center](#) to remain current with developments in this expanding field. Cohen and colleagues have also published guidelines for pediatricians to identify, treat, and refer traumatized children (21).

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## Section 8

# Evidence-Based Treatment for Adults

Julian D. Ford and Christine A. Courtois

A history of adverse childhood experiences (ACEs) is the norm rather than the exception among adult healthcare patients. Research documents a dose-response relationship between the number of ACEs experienced and the number and severity of both illness risk factors and psychosocial/behavioral problems (i.e., smoking, obesity, physical inactivity, depression, suicide attempts, alcoholism, drug abuse, sexual promiscuity, sexually transmitted diseases) and serious disease or other physical health problems (i.e., [heart disease](#), [cancer](#), [stroke](#), [chronic bronchitis](#), [COPD](#), [chronic pain](#), [diabetes](#), [hepatitis](#), and [skeletal fractures](#)). Screening for ACEs in primary care can identify patients for whom ongoing clinical surveillance of psychosocial/behavioral problems, anticipatory guidance and education, and timely early intervention are indicated (1). Many of these patients have developmental, psychological, and relational impairments that constitute a complex form of posttraumatic stress disorder (2).

Therefore, patients with clinically significant behavioral or medical conditions should routinely be screened for ACEs and other potential traumatic stressors. They should be provided with education<sup>2</sup> about how these “normal reactions to abnormal circumstances” can lead to persistent hypervigilance and chronic stress reactivity as a result of changes in the brain/body that were necessary to survive exposure to traumatic formative experiences early in life<sup>3</sup>. The adult sequelae of ACEs can be summarized as a shift into a perpetual state of alarm that takes the form of one or more of five “As”: anxiety, anger, anhedonia, alienation, avoidance. Patients tend to find concise, strengths-based, non-pathologizing explanations for the plethora of sequelae of ACEs as traumatic stressors affirming and de-stigmatizing.

Educational resources for patients with ACE histories who are at risk for or have mild to moderate severity psychosocial/behavioral problems can be retrieved from public information pages of professional organizations’ web sites, such as the [International Society for Traumatic Stress Studies](#), the [International Society for the Study of Trauma and Dissociation](#), the [American Psychological Association Division of Trauma Psychology](#), the [National Center for PTSD](#), and the [National Child Traumatic Stress Network](#).

When psychosocial/behavioral or medical conditions are severely impairing, referral for specialized traumatic stress assessment/evaluation and treatment should be considered by the medical practitioner. Evidence-based psychotherapy for adults with a history of ACEs requires careful attention to the therapist’s

training and experience in treating trauma of this sort and his or her ability to respond to the patient with empathy and respect while maintaining appropriate and defined boundaries and limitations (3<sup>Chapter 3</sup>). Special emphasis is also placed ensuring the patient's personal and interpersonal safety and on the teaching of emotional regulation and other life skills (often including preventive medical checkups and timely medical care, when warranted).

These foundations establish the treatment setting and relationship as a "secure base or safe haven" from which clients can explore and come to better understand and regain their selves, emotions, and relationships so as to alter the adaptations they made to survive complex trauma and to thereby "jump-start" their interrupted personal development. Thus, therapy [for adults with histories of early childhood trauma] has five essential foci: post-traumatic adaptations, relational working models, self-identity, healthy development, and emotion regulation.

Evidence-based psychotherapy for adults with ACEs histories typically involves a progression through three phases: safety and stabilization; trauma processing; consolidation of therapeutic gains (4). The first and third phases are best-practice approaches for all psychotherapeutic treatments, with attention to the unique impact of ACEs. The second phase, trauma processing, requires skillful and sensitive therapeutic guidance as the patient develops a coherent autobiographical understanding of traumatic experiences their impact on her/his life.

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Evidence Based Psychotherapy Models for Adults with ACEs-related Disorders  
(3,4)

Brief Psychodynamic Therapy

Cognitive Processing Therapy

Emotion Focused Therapy for Trauma

Eye Movement Desensitization and Reprocessing

Imagery Rehearsal/Rescripting Therapy

Narrative Exposure Therapy

Phased Model for Treatment of Dissociation

Prolonged Exposure Therapy

Present Centered Therapy

Present Focused Group Therapy

Seeking Safety

Skills Training in Affect and Interpersonal Regulation

Trauma Affect Regulation: Guide for Education and Therapy

Trauma Focused Group Therapy

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## Section 9

# Promising Clinical Interventions for Adverse Childhood Experience Survivors

David Clarke, David McCollum, Elliott Shulman, and Vincent Felitti

Adverse childhood experiences (ACEs) are a significant factor in millions of people who seek health care. Fortunately, promising new ideas addressing the long-term consequences of ACEs can mitigate their impact on medically unexplained symptoms, chronic functional syndromes and unhealthy behaviors.

A validated questionnaire (1) filled out in private may facilitate acquiring the ACE history. It is important to be aware that some ACE survivors fail to recognize the ACE's impact and may minimize or even deny childhood adversity (at least initially) unless asked about their early life in detail. A question of great practical value for uncovering ACEs in these patients is: "How would you feel if you learned that a child you care about was growing up exactly as you did?" Amnesia for childhood experiences is also a good marker for ACEs.

Once ACEs are detected, their effect on the patient's life should be sought: "I see on the questionnaire that .... Can you tell me how that has affected you later in life and how often you think about those experiences now?" (2)

The principal medical problem that clinicians perceive should be reframed as an adaptation or solution from the patient's perspective. (Examples are methamphetamine's anti-depressant effects, the reduction in unwanted attention experienced by the obese, and the immediate psychoactive benefits of inhaled nicotine.) With this change in perspective, our trauma-informed mindset conveys acceptance and compassion. They can be reassured that "the ACEs were not your fault", "it is no wonder you are feeling/behaving this way" and "You are NOT crazy. It is NOT all in your head. Your previous experiences have left your brain trying to be heard and we can help you." Our efforts to encourage a healthier lifestyle or relieve functional symptoms will then be focused on the root problem and not the adaptation to it, on the fire rather than merely the smoke. In addition, the higher quality clinician-patient relationship that results from this approach is itself therapeutic.

Another helpful initial approach is to point out to the ACE survivor that a hero in our society is someone who has overcome a difficult mental or physical challenge for a good cause. ACE survivors have done exactly that. Hearing a

health professional describe them in these terms helps initiate a reversal of the low self-esteem and guilt that are a common legacy of ACEs. This is of key importance in overcoming many negative health and social behaviors (3).

Many ACE survivors harbor substantial anger about their early lives. However, they also spent their childhood learning to avoid emotions in order to survive. Consequently their anger often is not consciously recognized. Unless the anger (or fear or grief) is completely repressed by amnesia, these emotions may be expressed somatically as physical symptoms. Asking the ACE survivor to imagine a child they care about growing up exactly as the survivor did can increase conscious awareness of these emotions. Then, when they feel ready, speaking to a trauma-informed counselor, writing a letter (rarely mailed) to the person(s) who mistreated them or autobiographical journaling (4) can relieve functional illness by converting somatic manifestations of emotion into verbal expression.

Because of the large number of patients and their reluctance to consult a mental health clinician for a physical symptom, a classroom lecture on stress and illness (5) and/or community resources (6) are often useful first steps to introduce key concepts and encourage further treatment. Many mental health professionals lack experience with patients whose most prominent ACE manifestation is one or more physical symptoms. Fortunately, resources are increasingly available that enable successful application of the clinician's prior training and experience to these patients (3,7,8,9,10,11).

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# Section 10

## Partnering with Parents: Pathways to Prevention in the Pediatric Setting

Linda Chamberlain

A growing body of research has documented the effects of current and past victimization on parenting skills and the quality of the parent-child relationship.<sup>[1],[2],[3]</sup> Due to the prevalence of adverse childhood experiences (ACEs), many families seen in the pediatric setting are living with the lingering effects that ACEs have upon brain development, social-emotional skills and cognitive function. The well documented physical and mental health consequences of ACEs for adult survivors can interfere with parents' ability to be sensitive to and respond appropriately to their children's needs.<sup>[4]</sup> This impaired parenting can provide the vehicle for the transmission of trauma to the next generation, even when ACEs are not currently present in a household. Conversely, consistent, nurturing parenting skills and secure attachments are protective for children experiencing early adversity.<sup>[5],[6],[7]</sup>

In their policy statement on [Childhood Adversity, Toxic Stress, and the Role of the Pediatrician](#), the American Academy of Pediatrics describes the pivotal role that pediatricians can have in promoting the positive parenting techniques and stable, responsive parent-child relationships that buffer the toxic effects of childhood adversity.

A trauma-informed approach to parenting in the pediatric setting has several key components:

- 1) empowers pediatric providers with the skills and resources needed to educate parents about the impact of ACEs upon both parenting and their child's development. <sup>[8]</sup>
- 2) recognizes that parenting may unexpectedly trigger memories of parents' traumatic experiences and meets parents where they are in terms of their life experiences;
- 3) creates an emotionally safe and nonjudgmental space for parents to talk about their own experiences with ACEs and concerns for their children and parenting;
- 4) offers universal education, support, resources that helps parents' to address their own trauma and the effects of toxic stress on their children; and

5) identifies families' strengths and builds resiliency by promoting positive parenting and healthy parent-child relationships.

Training on the impact of trauma on parenting will help pediatric providers to more accurately assess and assist families. An online curriculum and extensive bibliography with content on toxic stress, the connection between current and past family violence and the use of physical punishment, and positive discipline strategies is available in the [Institute for Safe Families site](#).

Web-based resources on child maltreatment including a brief video clip documenting a mother's journey to overcome the abuse she experienced as a child and become the kind of mother she wants to be can be found on the [CDC's Child Maltreatment site](#). (Promise of Prevention: A Survivor's Story found on right hand corner of home page.)

Providers should be familiar with a range of resources, including electronic media such as self-help web sites and apps, to assist parents and children who are coping with issues related to trauma so they can offer warm referrals.

[The Parent Trauma Resource Center](#) offers information about grief and trauma, self-help for parents and children including breathing exercises, meditation and relaxation techniques, and age-specific parenting strategies to help calm children.

An educational parent resource, designed for the pediatric setting, that describes the impact of ACEs on parents, children and parenting, and includes self-administered assessment for ACEs and resiliency, and describes parenting strategies to build resiliency will be available in Summer 2013 on the [Institute for Safe Families site](#).

There are a growing number of evidence-based and promising practices that address the effects of domestic violence, substance abuse and other forms of trauma on parenting and the parent-child relationship including [Connections and Breaking the Cycle, the CAFA Parenting Program, Caring Dads, and Child-Adult Relationship Enhancement](#).

The success of the [Triple P Positive Parenting Program](#) in preventing child maltreatment and improving the quality of life for children and their parents demonstrates the value of working with parents before things go wrong.

In addition to being familiar with the trauma-informed interventions for parenting that are available locally, pediatric providers should take a leadership role as vocal advocates for implementing best practices in their communities.

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# Section 11

## Self-Help Resources

Jane Ellen Stevens and Vincent J. Felitti

There aren't enough counselors or money to provide therapy for all people suffering from ACE-related problems. Although some people will have the resources to obtain help from social workers, psychologists or psychiatrists, most people want and will need other approaches. The following are resources for patients with ACE-related problems.

### Questionnaires

ACE questionnaire -- The 10-question ACE survey ([in Word file](#) and [online](#)). Developed by Dr. Robert Anda and Dr. Vincent Felitti, co-principal investigators, the [CDC's ACE Study](#).

Resilience questionnaire -- The 14-question survey ([in Word file](#) and [online](#)) was developed by the early childhood service providers, pediatricians, psychologists, and health advocates of Southern Kennebec Healthy Start, Augusta, Maine, in 2006, and updated in February 2013. Two psychologists in the group, Mark Rains and Kate McClinn came up with the 14 statements with editing suggestions by the other members of the group. The scoring system was modeled after the ACE Study questions. The content of the questions was based on a number of research studies from the literature over the past 40 years including that of [Dr. Emmy Werner](#) and others. Its purpose is limited to parenting education. It was not developed for research.

### News and networking

[ACEsConnection.com](#) -- Social network for people implementing ACE concepts. Provides wide-reaching resource section, and daily summaries with links to news, reports and research related to ACEs and trauma-informed practices.

[ACEsTooHigh.com](#) -- A news site for the general public covering how communities, states, agencies, nonprofits, social services and other organizations and individuals are implementing practices based on ACE and trauma-informed concepts, and research about ACEs, neurobiology of toxic stress, epigenetics and biomedical effects of ACEs.

## **Support/advocacy groups**

[Adults Molested as Children](#) -- Links to resources and online e-groups, including co-ed groups, and groups for men, women and women who were molested by a female.

[Survivors of Incest Anonymous](#) -- Links to local groups and meetings, upcoming events, an online store, translations of SIA-approved literature into several languages.

[Co-Dependents Anonymous](#) -- Links to meetings and literature, an online store, readings, articles and information about the annual conference.

[Adult Children of Alcoholics](#) -- Links to resources and groups for women and men who grew up in an alcoholic or otherwise dysfunctional homes.

[Adults Survivors of Child Abuse](#) -- An international self-help support group program designed specifically for adult survivors of neglect, physical, sexual, and/or emotional abuse. The program offers community-based, provider-based, and web-based self-help support groups.

[Alcoholics Anonymous](#) -- A resource for people who want information about dealing with alcoholism or to find a group.

[Al-Anon Family Groups](#) -- Links to resources and group meetings for friends and families of problem drinkers.

[Divorce Care for Kids](#) -- A site that helps children heal from the pain of divorce, with links to faith-based local groups.

[Fosterclub.com](#) -- A national network for young people in foster care.

[Faces and Voices of Recovery](#) -- A national campaign of individuals and organizations who advocate for public action to deliver the power, possibility and proof of recovery. Great resources for people who want to change perception of addiction from criminal or moral issue to a health issue.

[Futures Without Violence](#) -- National organization that works to prevent and end violence against women and children around the world. Provides links to the [National Domestic Violence Hotline](#), the [National Sexual Assault Hotline](#) and the [National Teen Dating Hotline](#).

[Narcotics Anonymous](#) -- A resource for all drug addicts, regardless of the particular drug or combination of drugs, including alcohol.

[National Alliance on Mental Illness](#) -- Provides links to support and programs, including a help line, peer support, discussion groups, and social networks, such as NAMI Faithnet.

[Prevent Child Abuse America](#) -- This national organization [builds awareness](#), [provides education](#) and inspires hope to everyone involved in the effort to [prevent the abuse and neglect of our nation's children](#).

[Rape, Abuse & Incest National Network](#) -- The nation's largest anti-sexual violence organization. It has a national sexual assault online hotline, a section for male survivors, and background information for all types of sexual assault.

[Resilience Trumps ACEs](#) -- Resources for parents, providers and the community on how to build resilience into families and communities.

[San Francisco Children of Incarcerated Parents](#) -- Great resource for children and families of people who are imprisoned.

[Self Helpline](#) -- Live one-on-one help for U.S. Department of Defense employees.

[Verbal Abuse Site](#) -- dedicated to the recognition and prevention of verbal abuse in [homes](#), [schools](#) and [workplaces](#)

### **Background information**

[CDC's Adverse Childhood Experiences Study](#) -- Overview, history and publication list.

[CDC's Adverse Childhood Experiences Study infographic](#) -- A visual overview of the ACE Study.

[The Science of Early Childhood](#) -- Harvard Center on the Developing Child overview on the effects of toxic stress on the developing brain, with good videos.

Article: [The Adverse Childhood Experiences Study -- the largest health study you never heard of -- began in an obesity clinic](#)

# Section 12

## Geriatric Patients - Special Issues

Steven Tam

Advances in research into Adverse Childhood Experiences (ACEs) have shown relationships between childhood adversity and poor mental health, physical health, and social outcomes in the adult population. More studies are needed to understand the mechanisms of these relationships and to aid in the development of treatment strategies for these conditions. With advances in life expectancy, the older adult population represents one of the fastest growing age groups in the United States and the impact of ACEs on the older adult will need to be understood in order provide the best geriatric care. Faced with issues such as fragility from medical conditions, decreased physical and cognitive reserves as well as certain geriatric syndromes like dementia, an older adult may find more difficulties contending with the mental and emotional health problems along with poor social outcomes that stem from ACEs developed earlier in adulthood.

Understanding the history and natural course of such emotional and mental health issues and how this impacts treatments will be important in providing proper care. For example a psychologist providing counseling and cognitive behavioral therapy for depression in an older adult may find it useful to know that an individual had a traumatic or abusive childhood experience. This is especially true if treatment of the depression has been very resistant to the standard treatment modalities.

Managing issues linked to ACEs also needs to also be viewed from the perspective of the individual and how these experiences may influence an individual's ability to manage the situations that arise in the elder years. Early adverse child experiences have been linked to some maladaptive behaviors later in life including alcohol and drug abuse, as well as a higher risk for attempted suicide. With some of the social and life changing events faced by our older adults, such as the loss of social support networks and increasing fragility of health as well as a medical condition such as dementia, lacking the proper adaptive skills will impair one's ability to face these events.

The role ACEs may play in the development of certain issues in geriatrics should also be considered. One example is in the field of Elder Abuse. Child abuse is a risk factor for the development of abusive parenting and domestic violence later on, which in turns become a risk factor for Elder Abuse later in life. Understanding such relationships and potential psychopathology may be a crucial step to preventing and combatting Elder Abuse.

Another example is the role childhood stressors may play in the development of a geriatric syndrome such as dementia. Studies have pointed to an association between psychological stress in adulthood and the development of dementia, possibly through activation of the hypothalamic pituitary adrenal axis and increasing levels of glucocorticoid hormones. One study looking at war veterans suggested a greater prevalence and incidence of dementia in older veterans with PTSD. With ACEs linked to depression, PTSD and other psychological problems, one possibility is that the stressors predisposing to dementia may start very early on. As future research investigates the prevention of dementia, attention has been focused on examining the cognitive health of the adult population, but maybe required to look even earlier than that.

As research moves forward examining the impact of ACEs on adulthood, little is known regarding the effect on the older adult. Further examination of the role and impact ACEs play on mental health and other illnesses adults contend with and how they age with the disease will be needed. Research on the contribution of childhood stressors to specific geriatric events and syndromes will also be beneficial.

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## Section 13

# Integrating Trauma Informed Principles Into Primary Care

Tasneem Ismailji and Harise Stein

Trauma is a pervasive and common human experience. In the National Co-morbidity study, more than 60% of men and 50% of women reported lifetime trauma. In the Adverse Childhood Experiences study an ACE score of one or more is found in 64% of the adult patients in the Kaiser sample.

Recently [SAMHSA](#) has provided a working definition of trauma:

*Individual trauma results from an event, series of events, or a set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional or spiritual well being.*

A trauma-informed approach alludes to how a primary care practice contemplates and responds to those who have or are experiencing trauma. This includes children and their caregivers, adults and their families, and providers. The core principles of trauma informed care are safety, trustworthiness, choice, collaboration and empowerment. (1)

A trauma-informed approach integrates the following key elements: realizing the prevalence of trauma, recognizing how trauma affects individuals, families and communities, and responding to this knowledge. The [National Child Traumatic Stress Network](#) recommends a trauma informed practice is one which:

1. Routinely screens for trauma exposure and related symptoms
2. Uses culturally appropriate assessment
3. Makes resources available on trauma exposure, its impact and effective treatments
4. Strengthens the resilience and protective factors of children and families
5. Addresses parent and care giver trauma and its impact on the family
6. Emphasizes continuity of care and collaboration across systems
7. Maintains an environment of care for staff that addresses secondary traumatic stress and increases staff resiliency.

In a clinical setting, providers who are trauma-informed recognize that a past or present history of trauma impacts medical conditions and their treatment,

mental health, substance use issues, and impeded access to care from abusive partners/caregivers. In addition, the medical setting itself may trigger flashbacks or displaced anger or anxiety in those patients with PTSD. This may create an additional barrier to health care due to difficult interpersonal interactions with staff, or lack of follow-up for needed tests due to anxiety (7). Other aspects of trauma, such as the possibility of minimal brain injury from head trauma or non-lethal strangulation may impact executive function and coping ability, making it very difficult for some patients to keep appointments, navigate the requirements of an often complex medical system, or maintain difficult treatment schedules (8). Providers and their staffs who are trained to recognize signs of past and present trauma, and who model trust and safety, can avoid re-traumatization and provide more effective treatment.

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4. National Health Collaborative on Violence and Abuse - [Trauma-Informed Care: The Role of the Health Care Provider](#) (webinar)
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Trauma-Informed vs. Non Trauma-Informed Care, adapted from [SAMSHA](#)

Trauma-Informed	Non Trauma-Informed
Recognition of high prevalence of	Lack of education on trauma prevalence

trauma	and universal precautions
Assess for trauma histories & symptoms	Cursory or no trauma assessment
Recognition of culture and practices that are retraumatizing	“Tradition of toughness “ valued as best approach
Power/control minimized	Demeanor/tone of voice =power
With caregivers/supporters-collaboration	Rule enforcers seeking compliance
Staff understand that violence and conflict most often arise due to situational factors	“Patient- blaming” is the norm
Understand that all behavior has meaning	Behavior seen as intentionally provocative and volitional
Objective neutral language	Labeling language-“ manipulative, needy, attention seeking”
Patient is the center of the treatment	Lack of self directed care
Education of illness-self management	
Transparent systems	Closed systems
Asking how they prefer to be addressed	Calling by first or last name without checking

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## Section 14

# Trauma Informed Care in Child and Family Serving Programs

Lisa Conradi and Charles Wilson

The findings from the ACES study clearly demonstrated that the effects of adverse childhood experiences, including traumatic events, are among the most emotionally devastating and have been linked to a host of negative outcomes in childhood, from emotional and behavioral problems to impaired school performance.<sup>i</sup> In order to better address these adverse childhood experiences, it is imperative to adopt a strategic and systemic approach, a trauma-informed approach, to care for children and families who have experienced significant stresses like those included in the ACEs.<sup>ii</sup> The National Child Traumatic Stress Network (NCTSN) developed the following definition of a trauma-informed child- and family-serving system<sup>iii</sup>:

A trauma-informed child- and family-service system is one in which all parties involved recognize and respond to the impact of traumatic stress on those who have contact with the system including children, caregivers, and service providers. Programs and agencies within such a system infuse and sustain trauma awareness, knowledge, and skills into their organizational cultures, practices, and policies. They act in collaboration with all those who are involved with the child, using the best available science, to facilitate and support the recovery and resiliency of the child and family.

While the actual words vary considerably across definitions and perspectives on trauma informed care, trauma- informed organizations and systems, some common themes emerge as the essential elements of a trauma-informed system.<sup>iv</sup> These include:

- 1) *Maximize physical and psychological safety for children and families.* The term psychological safety means a “sense of safety, or the ability to feel safe, within one’s self and safe from external harm.”<sup>v</sup> At its most fundamental level recovery from trauma requires a sense of safety, and providers must recognize safety is both physical and psychological.

- 2) *Identify trauma-related needs of children and families.* Where possible, a trauma-informed approach suggests the use of a reliable and valid screening tool for identifying the client's trauma history and traumatic stress responses, and to direct referrals for assessment and treatment when indicated.<sup>vi</sup>
- 3) *Enhance child well-being and resilience.* Trauma-informed care seeks to support positive relationships in the client's life and minimize disruptions of that which is familiar and positive figures while also supporting the referral to specially trained mental health professionals who are schooled in evidence based treatment models.
- 4) *Enhance family well-being and resilience.* Families may find it difficult to be protective if they have been affected by trauma, and may need help and support in order to draw on their natural strengths.
- 5) *Enhance the well-being and resilience of those working in the system.* Trauma-informed organizations must consider their staff's physical and psychological safety and actively work to promote effective interventions for secondary traumatic stress.
- 6) *Partner with youth and families.* Consumers being served, and often their family members, who have been involved in the service system, have a unique perspective and can provide valuable feedback on how the system can better address trauma among those served.
- 7) *Partner with agencies and systems that interact with children and families.* It is important for those aspiring to provide trauma-informed care partner with others in parallel service systems in identifying and addressing trauma. Working with allied professionals who know the clients and family can help in developing an appropriate service plan and prevent potentially competing priorities.

Taken together, these essential elements provide a helpful framework to conceptualize the components of a trauma-informed system for children and families.

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# Section 15

## Systems Integration

Randell Alexander

Awareness and knowledge of ACEs, the effects of toxic stress on the brain, neuroendocrine pathways, and epigenetics do not improve health if it is not translated into practical ways for others to implement. Thus juvenile court judges may wonder how this knowledge translates into decisions they make each day. Child abuse prevention specialists may question how to re-tool their messages or approaches. How should health professionals re-design their clinical approaches? Such concerns make it imperative to adopt a strategic and systemic approach.

Primary prevention should be the most important goal even though it is necessary to provide interventions for those already affected by adverse childhood experiences. While the consequences of child abuse ought to permeate all of society and its systems, the following systems deserve special attention.

### **Education**

The opportunities for prevention begin with early childhood education and extend into adult learning. Areas of focus can include teaching or modeling of psychologically supportive interactions, messages about not using physical means when frustrated or angry, sexual boundaries, and getting help when confronted with inappropriate feelings.

#### *Primary prevention*

Because educators work with children though much of their life, this is an opportunity for teaching and modeling of ways to interact with others, conflict resolution, respect for others, sexual boundaries and appropriate behaviors, and reinforcing positive feelings and behaviors.

#### *Interventions*

The educational system could help with early identification of children displaying apparent mental health problems knowing the high prevalence of adverse childhood experiences and how symptoms of ADHD, learning problems, and

behavior problems may not be a primary condition but the effects of ACEs. By knowing a child's ACE score (at multiple points in time) a school could better understand academic performance and help to tailor compensatory strategies.

## **Health**

### *Primary prevention*

Knowing that more than half of children will eventually have an ACE score greater than zero, proactive programs to protect and enhance brain development should be a priority. Often children do not see any professional except a physician until they go to kindergarten. This point of entry then becomes crucial to convey messages to parents about optimal brain development issues such as behavioral management, understanding development and when to be concerned, and positive ways a parent can interact with their child.

### *Interventions*

In the primary care physician's office, knowledge of a parent's and child's ACE scores can lead to early referral to helpful services. Some parents might alter their adverse behaviors were it explained that child abuse can even change a child's very DNA. Pediatricians are in a good position to advocate for policies that promote child development with the goal of creating healthy, well functioning adults.

## **Child Welfare**

### *Primary prevention*

Child abuse prevention programs are not merely to stop various types of abuse, but can be re-conceptualized as developing alternative positive realities whereby children are safe and brains are stimulated to develop optimally. Presumably most parents would be enthusiastic in wanting the most for their children but would appreciate assistance about how to achieve these goals.

### *Interventions*

When a parent does not comply well with a case plan, it is tempting to use labels such as unwilling, bad, or lazy. It may be more helpful to consider that a parent with adverse childhood experiences likely has differences in brain development (e.g. decreased activity of the prefrontal cortex which mediates executive functions) that make scheduling and sustaining tasks very difficult. This enables professionals to understand that the parent's behavior reflects the brain they have – as a consequence of their own childhood adversities. The question then becomes whether services that exist (or could exist) are able to bridge the gap or

whether the parent is unable to function well enough to promote the brain development of their own children.

## **Legal/Law Enforcement**

### *Primary prevention*

Community programs can be explored that reduce exposure to community violence and violence within the home. This could begin in cooperation with schools.

### *Interventions*

Laws and approaches can be structured to encourage a parent who has abused a child to tell the truth, so that quick and sometimes vital health and mental health intervention can be started sooner. This approach encourages the parent to be part of the team trying to lessen the effects on the child's health and brain of the abuse already committed and that which they likely experienced.

## **Business**

### *Primary prevention*

Businesses have a vested interest in employees with less dysfunction caused by adverse childhoods. Absenteeism, health care costs, and retention all are improved in those with healthy childhoods. Currently business leaders are working with the Centers for Disease Control and Prevention (CDC) to explore ways that business can play a role in preventing child abuse.

### *Interventions*

Businesses have employees who already experienced adverse childhoods. Rather than a passive, sometimes punitive, approach to the problems this may create, the business community could promote forms of employee wellness that better understand this and attempt to compensate for these adversities. A better workforce is the prime goal.

In all of these approaches, a common theme is maintaining an overview of what enhances the safe, stable, and nurturing development of the developing child, and how working together as systems, society is able to optimize the child's brain and their health now and in the future. (cite CDC SSNR initiative here)

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## Section 16

# Adverse Childhood Experiences: Future Research Directions

Roy Wade, MD, PhD, MPH; Cari Clark, ScD, MPH; Megan H Bair Merritt, MD, MSCE

Advances in a diverse set of disciplines have led to an increased understanding of the mechanisms by which Adverse Childhood Experiences (ACEs) predispose individuals to poor health outcomes. ACEs have been linked to health damaging behaviors, poor psychosocial health, and physiologic disruptions in the developing brain and regulatory systems thereby increasing risk for disease. With this new knowledge, there has been growing interest in the role that health care providers and community based organizations can play in identifying ACEs and fostering resilience in patients and clients. For this to occur most effectively, however, researchers must develop a more nuanced understanding of the following: 1) how biological embedding contributes to health outcomes along the life course, including ways in which to measure physiological changes in the clinical setting; 2) how ACEs differentially affect diverse populations; and 3) how to effectively prevent ACEs and mitigate their impact.

Syntheses of the literature have begun to comprehensively characterize how ACEs “get under the skin<sup>1,2</sup>.” Research has elucidated, in part, the process by which increased production of stress hormones leads to alterations in underlying molecular pathways and inflammatory mediators, eventually causing multisystem impairments<sup>3-6</sup>. However, the field lacks standard, feasible “biomarkers” that can be used clinically to predict patient outcomes. Specifically, more research must be done to understand the cascade of biological changes that occur as part of alterations in stress physiology, the clinical relevance of changes in specific physiologic markers, and the responsiveness of these changes to intervention. Development of such biomarkers may help clinicians treat and counsel patients, and may set the stage for intervention development.

Although ACE-related studies to date have demonstrated a strong association between ACE score and adverse adult health, it is unclear how ACEs differentially affect specific populations or how ACEs contribute to the persistence of health disparities.

- Does the constellation of salient ACEs differ by race/ethnicity, socio-economic status, urban/suburban/rural location, socio-cultural group, immigration/refugee status, and sexual orientation? If the constellation of relevant ACEs differs by population, screening questions may need to be tailored to specific populations.
- Does poverty interact with ACEs to potentiate their impact? To date, there have not been published studies examining the breakdown of ACEs by socio-demographics and analyzing these associations to determine how they may differently contribute to health outcomes amongst at risk populations.

- Disparities have been noted in exposure to ACEs (e.g. by socio-economic status<sup>7</sup> and by sexual orientation<sup>8</sup>). However, it is not clear whether differences in experiences with ACEs help account for some health disparities. If ACEs do account for part of this variance, then developing effective preventive strategies will be critical in ameliorating disparities.

Understanding the potential differential impact of ACEs by socio-demographic group may open up new strategies to bend the health care cost curve and improve long standing outcomes for vulnerable populations.

While the association between adult health outcomes and ACEs has been clearly documented<sup>9-13</sup>, this association has not been firmly established for pediatric health outcomes. The strongest associations between ACEs and pediatric health outcomes has been documented with developmental, mental, and behavioral health<sup>14,15</sup>. Studies that have looked for associations between ACEs and pediatric physical health outcomes have demonstrated links between ACEs and poor overall physical health but failed to investigate associations with common pediatric chronic illnesses<sup>16,17</sup>. Further, as with much of the ACEs literature, the majority of the research investigating child/adolescent health impact suffers from limitations and biases associated with self-report of both the exposures and the outcomes, limiting the strength of the findings. With increasing trends in obesity, insulin resistance, and asthma among other chronic pediatric medical conditions, the association between ACEs and these chronic health conditions must be further explored and to the extent possible using objectively defined measures of health impact. Studying ACEs in pediatric populations allows researchers to follow participant cohorts prospectively rather than retrospectively, as has been done in most ACE-related studies. In addition, investigating ACEs in pediatric populations will offer researchers the opportunity to disentangle the timing related to exposure to ACEs, physiologic changes in stress reactivity, development of risky coping strategies, and acquisition of health conditions.

Finally, although the “ACEs Next Steps” document has discussed strategies for intervention and for building resilience, few are evidence-based. Increasingly, “on the ground” organizations that are implementing intervention strategies must partner with researchers, so that epidemiologically rigorous tests of ongoing programs occur. In research trials, home visiting and parenting programs designed to strengthen families have shown some limited efficacy among certain populations and in low-income urban communities<sup>18-20</sup>. Numerous cognitive behavioral therapy programs also have shown efficacy in improving outcomes for children with significant adversity, though most of these therapy programs are only available in a limited number of communities. Cost effectiveness studies may help promote broader dissemination. Future research must continue to identify cost effective, evidence-based strategies that strengthen at risk families and provide meaningful support for all patients/clients who have been affected by ACE exposure.

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