

Adverse Childhood Experiences (ACEs)

A new way of understanding adult health risks in Iowa

Most folks intuitively know that childhood experiences shape adult lives. But a new line of research is greatly expanding our understanding of this process—documenting how nurturing, stable environments help children develop the cognitive and emotional skills and robust sense of self they need to thrive as adults.

The research, coming this year to Iowa, also shows how negative experiences can derail those processes, leading to a host of health problems and risk behaviors in adulthood.

Adverse childhood experiences, or ACEs, are broadly defined as incidents during childhood that harm social, cognitive and emotional functioning. Frequent or prolonged exposure to such events creates toxic stress that damages the architecture of the developing brain.

The negative outcomes are serious. On the health side, they include diabetes, hypertension and heart disease, depression, morbidity and early death. On the risky-

behavior side, they include smoking, overeating, alcoholism and drug use.

Iowa's adult population has health problems strongly associated with ACEs.

Evidence shows that the more ACEs a person experiences, the more likely poor health

outcomes become. Ongoing research by the Centers for Disease Control finds that, worst case, trauma in childhood could take as many as 20 years off life expectancy.

Adverse childhood experiences don't guarantee bad outcomes for adults, but they increase the odds of struggle. And they are largely preventable.



What are adverse childhood experiences?

ACEs are incidents that dramatically upset the safe, nurturing environments children need to thrive.

The original, seminal ACEs work, conducted from 1995 to 1997 by investigators Robert Anda and Vincent Felitti, included surveys of more than 17,000 Kaiser Permanente HMO members about their childhood exposure to nine different adverse experiences:

- **Recurrent physical abuse**
- **Recurrent emotional abuse**
- **Contact sexual abuse**
- **An alcohol and/or drug abuser in the household**
- **An incarcerated household member**
- **Someone in the household who is chronically depressed, mentally ill, institutionalized or suicidal**
- **Mother is treated violently**
- **One or no parents**
- **Emotional or physical neglect**

Those results, combined with the findings of physical exams and ongoing tracking of members' health experiences, strongly documented the link between adverse childhood experiences and negative health and behavioral outcomes later in life.

Learning about ACEs in Iowa

Iowa advocates are just starting to explore the prevalence of ACEs, but we already know the Iowa adult population has health problems strongly associated with ACEs in national studies. In 2010, an estimated:

- 66% (1,534,756) of Iowans were overweight or obese
- 8% (173,877) had been told they were diabetic, and another 6% (122,236) prediabetic
- 8% (178,514) had cardiovascular disease
- 16% (373,256) were current smokers, and 23% (542,497) former smokers
- 5% (120,555) were heavy drinkers, and 17% (391,803) binge drinkers¹

These health outcomes are costly. Estimates attributed \$738 million in Iowa health care costs to adult obesity in 2003, with almost 50 percent of those costs paid by Medicare

(\$165 million) and Medicaid (\$198 million).² Chronic cardiovascular health conditions cost Iowans an estimated \$1.34 billion annually.³ The total cost of diabetes in Iowa exceeds \$1.5 billion a year.⁴

One way to contain health costs is by preventing chronic health conditions and risky behaviors. Addressing ACEs is a place to start.

Long term, one of the most important ways to contain health costs is not by finding cheaper ways to treat such conditions, but preventing them in the first place. Preventing or mitigating the effects of ACEs is one place to start.

To document ACEs in the Iowa population, health planners this year added specific ACEs-related questions to an annual state health survey conducted by the CDC. The Behavioral Risk Factor Surveillance System is a timely and accurate source of Iowa data on health risk behaviors, preventive-health practices, and health-care access, primarily related to chronic disease and injury. Responses on ACEs will be available for analysis in fall 2013. *Continued on page 4*

Why are adverse childhood experiences so damaging? Toxic stress

Extensive research on the biology of stress shows that healthy development can be derailed by excessive or prolonged activation of the body's stress response systems, with damaging effects on learning, behavior and health.

Learning to cope with stress is an important part of child development. When we are threatened, our bodies prepare us to respond by increasing our heart rate, blood pressure and stress hormones, such as cortisol. When a young child's stress response systems are activated within an environment of supportive adult relationships, these physiological effects are buffered and brought back down to baseline. The result is the development of healthy stress response systems.

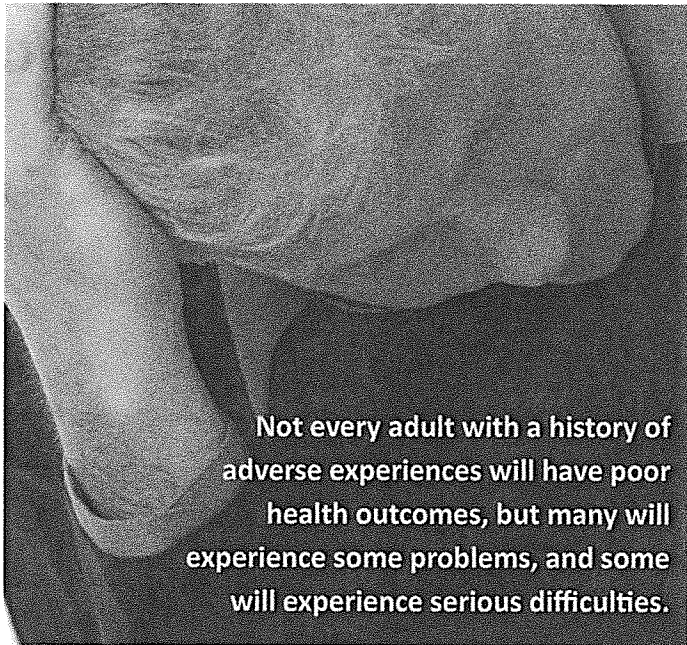
Toxic stress occurs when a child experiences strong, frequent and/or prolonged adversity—physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence and/or the accumulated burdens of family economic hardship—without adequate adult support.

The prolonged activation of stress response systems disrupts the development of brain architecture and other organs and increases the risk for stress-related disease and cognitive impairment. The more adverse experiences in childhood, the greater the likelihood of developmental delays and later health problems, including heart disease, diabetes, substance abuse and depression.

— from the Harvard Center for the Developing Child, http://developingchild.harvard.edu/topics/science_of_early_childhood/toxic_stress_response/

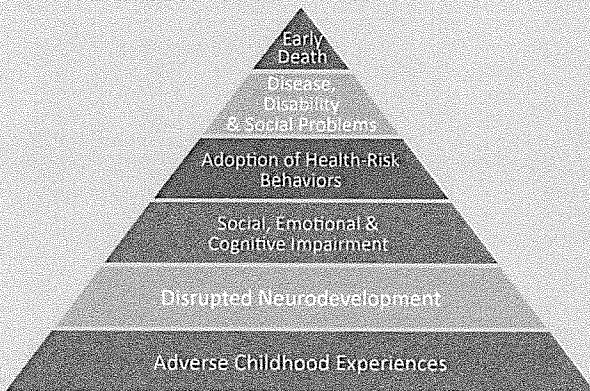


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Not every adult with a history of adverse experiences will have poor health outcomes, but many will experience some problems, and some will experience serious difficulties.

The more ACEs, the higher the risk of poor adult outcomes



Anda and Felitti's work on ACEs has helped build a new understanding of the cumulative effect of adverse experiences on human development. The likelihood of risky behavior or poor health outcomes increases substantially with the number of ACEs reported, as demonstrated in the chart below.

Outcome	No ACEs	1-3 ACEs	4-8 ACEs
Heart disease	1 in 14	1 in 7	1 in 6
Smoker	1 in 16	1 in 9	1 in 6
Alcoholic	1 in 69	1 in 9	1 in 6
Suicide attempt	1 in 96	1 in 10	1 in 5
IV-drug user	1 in 480	1 in 43	1 in 30

— from "The High Cost of Adverse Childhood Experiences," PowerPoint, Washington State Family Policy Council (2007).

The good news? We know how to reduce damage from toxic stress

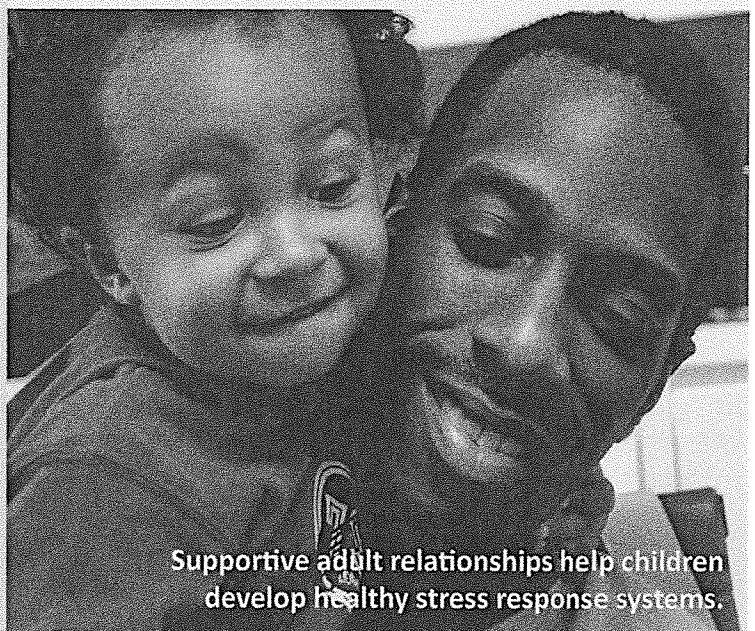
The most effective prevention is to reduce young children's exposure to extremely stressful conditions, such as recurrent abuse, chronic neglect, caregiver mental illness or substance abuse, violence and/or repeated conflict.

Research shows that, even under stressful conditions, supportive, responsive relationships with caring adults as early in life as possible can prevent or reverse the damaging effects of toxic stress response.

There are increasingly sophisticated interventions to help families stabilize themselves. We also know there are factors that can minimize the damage from ACEs:

- Caring relationships with parents, extended family and other caring adults
- Good health and a history of adequate development
- Good peer relationships
- Hobbies and interests
- Active coping style
- Positive self-esteem
- Good social skills
- Internal locus of control
- Easy temperament
- Balance between seeking help and seeking autonomy

— from "Adverse Childhood Experiences in Wisconsin: Findings from the 2010 Behavioral Risk Factor Survey," Children's Trust Fund, Children's Hospital and Health System and the Child Abuse Prevention Fund.



Supportive adult relationships help children develop healthy stress response systems.

What's next for Iowa?

The experience of other states tells us that Iowa-specific ACEs data will offer a powerful new way to structure state and local planning around human-service systems.

Washington State's ACEs work "invited people to rethink their mental models on how to solve child and family problems, but also social problems like child abuse, domestic

Iowa-specific data could lead to concrete changes in programs and policies.

violence, substance abuse," said Laura Porter, director of the Washington Family Policy Council, a cabinet-level organization of local public health and safety networks in that state.

Advocates there report programs are better positioned to support children's healthy reactions to trauma. For example, Washington's crisis nurseries—serving children who have been referred from Child Protective Services—have implemented programs to teach these young children how to calm and sooth themselves through play.

Iowa-specific ACEs information could lead to similar, concrete changes in programs and policies here. For example, advocates might use the data to:

- Increase policymakers' understanding of the prevalence of ACEs in order to inform policy decisions, such as Iowa's mental-health redesign
- Integrate trauma-informed professional development across all state departments and systems serving families
- Infuse high-quality, evidence-based practices into family-based programming
- Improve the effectiveness of public-health awareness campaigns by refining their messages based on ACEs information.
- Promote early intervention and identification of ACEs through universal screening or assessment within family-serving systems.

This is an exciting opportunity for Iowans who care about the well-being of our citizens. How to respond to this new information on ACEs is a topic requiring broad input at the state and local levels, among the public and private sectors, and from families, policymakers, health-care providers and educators.

That kind of statewide conversation can deliver on the promise of ACEs to address adversity in the lives of Iowa children and prevent their clear and long-term impacts.

¹ Data from Behavioral Risk Factor Surveillance System (BRFSS) annual report for Iowa, 2010.

² Finkelstein EA, Fiebelkorn IC, Wang G. State-level estimates of annual medical expenditures attributable to obesity. *Obesity Research*. 2004; 12 (1): 18-24.

³ Milken Institute, *An Unhealthy America: The Economic Impact of Chronic Disease*, October 2007.

⁴ "Combined State Sheets." Juvenile Diabetes Research Foundation, 2010. http://advocacy.jdrf.org/files/General_Files/Advocacy/2010/CombinedStateSheets4.05.10.pdf. The American Diabetes Association estimates that a third of these costs are indirect, such as lost work productivity, and two-thirds are the direct result of medical bills.

ACEs activities in Iowa are sponsored by:

To learn more about ACEs, visit the Mid-Iowa Health Foundation's website, www.midiowahealth.org, or contact Sonni Vierling at the Iowa Department of Public Health, 515-281-8284 or sonni.vierling@idph.iowa.gov. This brief was produced by the Child and Family Policy Center.

