

## The Adverse Childhood Experiences (ACE) Study

Study Shows that the Early Detection of Childhood Maltreatment Offers an Excellent Opportunity For Preventing Physical Illness In Adulthood.

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**T**he Adverse Childhood Experiences (ACE) Study is the first large-scale study to empirically demonstrate that various types of trauma and household dysfunction in childhood significantly increase the risk for physical and mental disease in adulthood. While the relationship between childhood maltreatment and mental health problems is well documented, the ACE Study breaks new ground in exposing the physical manifestations of childhood trauma. Tracking over 17,000 largely white and middle-class adults over a period of more than 15 years, the ACE Study provides compelling evidence that when childhood maltreatment is not dealt with, the risk for heart disease, cancer, diabetes, and several other major illnesses rises dramatically. In effect, the study shows that time alone does not heal certain adverse experiences commonly found in the childhoods of many Americans. Indeed, time conceals. ACE data strongly suggest that early screening and intervention services would translate into an excellent return on the expenditure of public health dollars across a broad spectrum of the population.

### What is an ACE?

An ACE, or “adverse childhood experience” is contact with any of the following conditions prior to age 18:

1. Recurrent physical abuse
2. Recurrent emotional abuse
3. Contact sexual abuse
4. An alcohol and/or drug abuser in the household
5. An incarcerated household member
6. Someone in the home who is chronically depressed, mentally ill, institutionalized, or suicidal



7. Domestic violence
8. One or both biological parents absent
9. Emotional or physical neglect

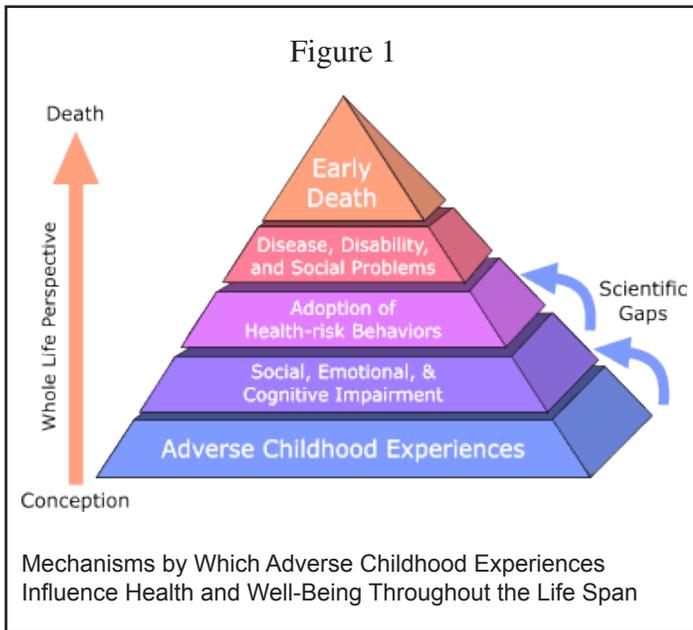
### What is the ACE Study?

The ACE Study is an ongoing collaboration between the Centers for Disease Control (CDC) and Prevention and Kaiser Permanente led by co-principal investigators Robert F. Anda, MD and Vincent J. Felitti, MD. As the average age of participants in the study is 57 years old, the study measures the relationship of childhood maltreatment to adult health status a half-century later. The study is perhaps the largest of its kind to track the effect of childhood experiences over the lifespan.

### What is an ACE Score?

The ACE Score is calculated by tallying the total number of categories of childhood stressors listed above, using a standardized questionnaire administered to participants. The higher the ACE Score, the greater the likelihood that a person will develop one or more of the following:

- ischemic heart disease
- cancer
- chronic bronchitis or emphysema
- hepatitis or jaundice
- skeletal fractures



- diabetes
- smoking
- sexually transmitted diseases
- poor self-rated health
- alcoholism
- drug use
- depression

**How do traumatic emotional experiences in childhood translate into disease later in life?**

In large part, untreated abuse translates into disease as the result of various behavioral coping mechanisms such as smoking, excess drinking, drug use, promiscuity, and overeating being utilized to gain relief. Figure 1 offers a conceptual framework for how ACEs promote the generation of cumulative risk factors.

**Strong positive correlation between the number of childhood exposures and health risk factors for disease.**

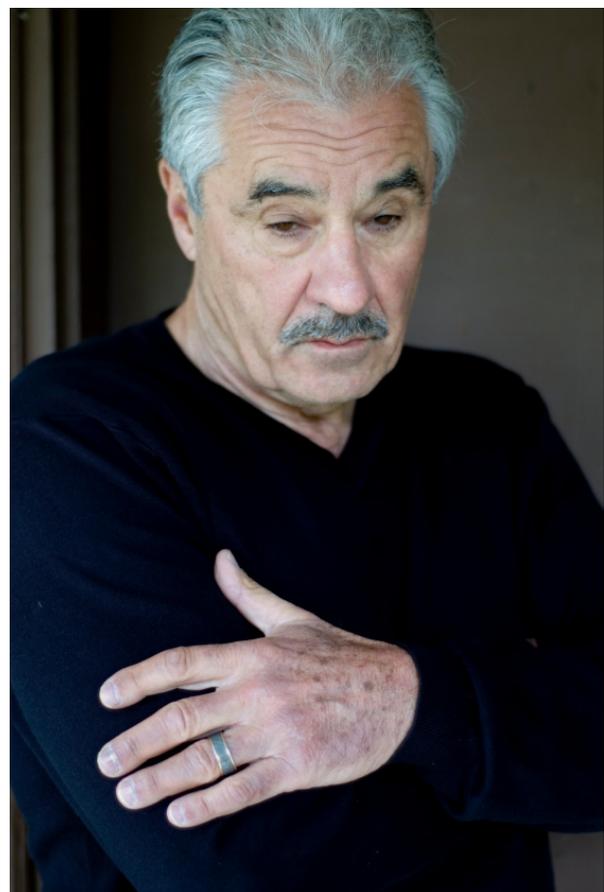
A person with an ACE Score of 4 (meaning that he or she reports having 4 categories of childhood stressors upon questioning) is 260% more likely to have chronic obstructive pulmonary disease than a person with an ACE Score of 0. Persons with an ACE Score of 4 have a 240% greater chance of having hepatitis compared to those with an ACE Score of 0.

When looking at purely emotional outcomes like self-defined current depression or self-reported suicide

attempts, the results showed even more powerful effects ranging up to thousands of percent increases. Every increase in the ACE Score means an increased risk for a wide range of negative health behaviors or physical diseases. Early detection and treatment holds promise for interrupting this cycle.

**The ACE Study has attracted considerable interest and support.**

In addition to the CDC, the importance of the ACE Study has been recognized by a wide range of government and professional bodies, including the Annie E. Casey Foundation and the Piper Foundation, and has enjoyed extensive support in the academic community. Six states (Arkansas, California, Louisiana, Michigan, Montana, and New Mexico) have included an optional module on ACE in their collection of Behavioral Risk Factor Surveillance System (BRFSS) data. International interest in replication of the ACE Study has appeared in Canada, China, Jordan, Norway, the Philippines, and the United Kingdom. Lastly, the World Health Organization has cited ACE Study questionnaires for being of notable interest in some of its related publications.



## Screening people for ACEs is cost-effective.

The Study's findings have strong implications for the nation's health and medical practice on a number of levels:

- ACEs are a leading determinant of public health spending.

**Recommendation:** Utilize ACE data to integrate and transform service systems in New York State by adding the ACE questions to the BRFSS questionnaire.

- The medical savings that ACE data implies are relevant to a broad spectrum of the population.

**Recommendation:** Integrate questions about ACEs into the routine physical examination of patients and across service systems.

- The most significant economic savings will come from interventions designed to prevent childhood maltreatment.

**Recommendation:** Invest in early-intervention programs like home visiting that can alter the conditions under which ACEs occur.

This data is of great importance for policy makers charged with making allocation decisions about scarce public health resources. It offers a new way of thinking about prevention of physical illness and a compelling rationale and justification for adopting a preventive approach to childhood abuse and neglect.

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