Adverse Childhood Experiences and their Repressed Relationship to Adult Well-being, Disease, and Premature Death

The ACE Study is a collaborative effort between
Kaiser Permanente and the Centers for Disease Control

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The ACE Study Summary of Findings:

• Adverse Childhood Experiences (ACEs) are very common, but mostly unrecognized.

• ACEs are strong predictors of later well-being, health risks, disease, and premature death.

• This combination makes ACEs the leading determinant of the health and social well-being of our nation.
What is the *Core* Problem Here?

In 51 weeks:

408 to 132 lbs

Which photo represents the patient’s *problem*?
>400 lbs.
in a shorter period of time than the weight was lost.
ACE Study Design

Survey Wave I
71% response (9,508/13,454)
n=13,000
All medical evaluations abstracted

Survey Wave II
n=13,000
All medical evaluations abstracted

Present Health Status
17,337 adults

Mortality
National Death Index

Morbidity
Hospitalization
Doctor Office Visits
Emergency Room Visits
Pharmacy Utilization
### Prevalence of Adverse Childhood Experiences

#### Abuse, by Category
- Psychological (by parents) 11%
- Physical (by parents) 28%
- Sexual (anyone) 22%

#### Neglect, by Category
- Emotional 15%
- Physical 10%

#### Household Dysfunction, by Category
- Alcoholism or drug use in home 27%
- Loss of biological parent < age 18 23%
- Depression or mental illness in home 17%
- Mother treated violently 13%
- Imprisoned household member 5%
Adverse Childhood Experiences Score

Number of categories (not events) is summed…

<table>
<thead>
<tr>
<th>ACE Score</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>33%</td>
</tr>
<tr>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>15%</td>
</tr>
<tr>
<td>3</td>
<td>10%</td>
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<tr>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>5 or more</td>
<td>11%*</td>
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</table>

- 67% experienced at least one category of ACE.
- If any one ACE is present, there is an 87% chance at least one other category of ACE is present, and 50% chance of 3 or >.
- Women are 50% more likely than men to have a Score >5.
Molestation in Childhood

Is Obesity genetic?  It’s certainly familial.
Depression:

Most say depression is a disease. Many say depression is genetic. Some say it is due to a chemical imbalance in the brain.
Well-being

Childhood Experiences Underlie Chronic Depression

- With a lifetime history of depression:
  - ACE Score 0: Approximately 10% for both women and men.
  - ACE Score 1: Approximately 15% for women, 20% for men.
  - ACE Score 2: Approximately 25% for women, 30% for men.
  - ACE Score 3: Approximately 40% for both women and men.
  - ACE Score >=4: Approximately 60% for both women and men.

Women are generally affected more than men, especially at ACE Scores of 2 and above.
Well-being

Childhood Experiences Underlie Suicide Attempts

% Attempting Suicide

ACE Score

0 1 2 3 4+
ACE Score and Rates of Antidepressant Prescriptions
approximately 50 years later
An ad from the 1940s, for the Profession

IS OFTEN PREFERABLE TO OTHER FORMS OF AMPHETAMINE—
because—
smaller doses produce longer cerebral stimulation,
with a minimum of undesirable excitement and other
side-effects.
When patients with depression, narcolepsy,
alcoholism, or obesity are selected as suitable cases
for stimulant therapy, 'Amphedroxyn Hydrochloride'
is a prudent choice of drug.

Lilly
SINCE 1876

Detailed information and literature on
'Amphedroxyn Hydrochloride' are personally
supplied by your Lilly medical service representative
or may be obtained by writing to
Eli Lilly and Company, Indianapolis 6, Indiana, U.S.A.
Risk Behaviors: ‘Addictions’

Smoking to Self-Medicate

Distant consequences of abuse
The traditional concept:

“Addiction is due to the characteristics intrinsic in the molecular structure of some substance.”
The ACE Study challenges that by showing:

Addiction highly correlates with characteristics intrinsic to that individual’s childhood experiences.
Adverse Childhood Experiences vs. Smoking as an Adult

Health Risks

p < .001
Health Risks

Childhood Experiences vs. Adult Alcoholism

ACE Score

% Alcoholic

0
1
2
3
4+

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

ACE Score

% Alcoholic
ACE Score vs Injection Drug Use

Health risks

ACE Score vs Injection Drug Use

p<0.001
The Hidden *Threat* of Weight Loss

The unspoken *benefits* of Obesity
The Silent *Benefits* of Obesity

Lost 158 pounds, but why did he gain it?

`Physical safety in being obese ...`
Health risks & Social function:

Looking for Love
ACE Score vs > 50 Sexual Partners

Adjusted Odds Ratio

ACE Score
Social function

ACE Score and Teen Sexual Behaviors

Looking for love

Percent With Health Problem (%) 0 1 2 3 4 or more

- 0
- 1
- 2
- 3
- 4 or more

- Intercourse by 15
- Teen Pregnancy
- Teen Paternity

Intercourse by 15
Teen Pregnancy
Teen Paternity
Childhood Experiences Underlie Later Being Raped

% Reporting Rape

ACE Score

Well-being
ACE Score and the Likelihood of Perpetrating Domestic Violence

Social function:
ACE Score and Indicators of Impaired Worker Performance

Social function:

- Absenteeism (≥2 days/month)
- Serious Financial Problems
- Serious Problems Performing job

ACE Score:
- 0
- 1
- 2
- 3
- 4 or more

Prevalence of Impaired Performance (%)
The ACE Score and the Prevalence of Liver Disease (Hepatitis/Jaundice)
ACEs Increase Likelihood of Heart Disease*

- Emotional abuse 1.7x
- Physical abuse 1.5x
- Sexual abuse 1.4x
- Domestic violence 1.4x
- Mental illness 1.4x
- Substance abuse 1.3x
- Household criminal 1.7x
- Emotional neglect 1.3x
- Physical neglect 1.4x

A Complex Point
How and why do Adverse Childhood Experiences exert their influence throughout life?

Why is treatment so difficult?
Healthy Brain
This PET scan of the brain of a normal child shows regions of high (red) and low (blue and black) activity. At birth, only primitive structures such as the brain stem (center) are fully functional; in regions like the temporal lobes (top), early childhood experiences were the circuits.

An Abused Brain
This PET scan of the brain of a Romanian orphan, who was institutionalized shortly after birth, shows the effect of extreme deprivation in infancy. The temporal lobes (top), which regulate emotions and receive input from the senses, are nearly quiescent. Such children suffer emotional and cognitive problems.
Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan
In Summary, the ACE Study shows:

Adverse childhood experiences are the most basic and long-lasting cause of health risk behaviors, mental illness, social malfunction, disease, disability, premature death, and healthcare costs.
What are conventionally viewed as Public Health problems are often an individual’s attempted solutions to long concealed adverse childhood experiences.
Translating Research into Practice

a beginning

Interventions

1.3 million comprehensive medical evaluations since 1975
An Individual, Population-based Health Appraisal System: A Biopsychosocial Concept

- Comprehensive history *not* symptom-initiated obtained at home by detailed questionnaire, better by Internet.

Includes ACE Questions
Unconventional Questions of Demonstrated Value

• Have you ever lived in a war zone?
• Have you been a combat soldier?
• Who in your family has committed suicide?
• Who in your family has been murdered?
• Who in your family has had a nervous breakdown?
• Were you ever molested as a child?
• Have you ever been held prisoner?
• Have you ever been tortured?
• Have you been raped?
Benefits of Incorporating a Trauma Approach

Biomedical evaluation: 11% reduction in DOVs in subsequent year. (700 patient sample)

Biopsychosocial evaluation: 35% reduction in DOVs in subsequent year. (130,000 patient sample)
What Can We Do Today?

• Routinely seek a history of adverse childhood experiences from all patients and inmates, by questionnaire.

• Acknowledge their reality by asking, “How has this affected you later in your life?”

• Use existing systems to help with current problems.

• Develop systems for primary prevention.
Final Insights from the ACE Study

- Adverse childhood experiences are common & typically unrecognized.
- Their link to problems later in life is strong, proportionate, and logical.
- They are the nation’s *most basic* public health problem.
- It is comforting to mistake intermediary mechanism for basic cause.
- What presents as the ‘Problem’ may be someone’s attempted solution.
- Treating their solution may be threatening and cause flight from treatment.
- Change will be resisted in spite of huge personal and economic benefits.
www.AVAHealth.org  (4-hour DVD on the ACE Study)

www.ACEsTooHigh.com  and ACEsConnection.com

Medline/PubMed, Google  (Anda or Felitti as authors)

www.HumaneExposures.com  (3 insightful books)

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