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## Adult Health Problems Linked to Traumatic Childhood Experiences

Thursday, May 14, 1998

Contact: Kathy Harben

 CDC, National Center for Chronic Disease Prevention  
& Health Promotion  
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Many of the most common causes of death and disability in this country may be linked to adverse emotional experiences in childhood, according to a study published today in the *American Journal of Preventive Medicine*.

The Adverse Childhood Experiences (ACE) study, conducted by the Kaiser Permanente Medical Care Program in San Diego, the Centers for Disease Control and Prevention (CDC), Emory University in Atlanta, and the University of Arizona Health Sciences Center in Tucson, suggests that childhood abuse and household dysfunction lead to the development decades later of the chronic diseases that are the most common causes of death and disability in this country, including heart disease, cancer, chronic lung and liver disease, and injuries.

Categories of abuse and household dysfunction during childhood include psychological, physical, or sexual abuse; violence against the mother; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned.

"Abused children may use behaviors such as cigarette smoking, heavy alcohol use, overeating, promiscuity, and drug use as a way of coping with damaging experiences much earlier in life," says a principal investigator of the study, Dr. Vincent Felitti, Chief of Preventive Medicine at Kaiser Permanente in San Diego.

Traditionally viewed as public health problems, these behaviors appear to be coping mechanisms for people who have had adverse childhood experiences, the study found. The authors suggest the behaviors may also reflect the effects of the adverse experiences on the developing brain chemistry -- effects that may lead to the adoption of the coping behaviors.

The ACE study was designed to assess the relationship between the childhood experiences and the current health status and health risk behaviors of 30,000 mainly middle-class adult members of Kaiser Permanente. To date, data have been collected from 19,000 cooperating adults. Additional results will be reported as more data are collected.

A strong relationship was seen between the number of adverse experiences and self-reports of cigarette smoking, obesity, physical inactivity, alcoholism, drug abuse, depression, suicide attempts, sexual

promiscuity, and sexually transmitted diseases. Furthermore, persons who reported higher numbers of adverse childhood experiences were much more likely to have multiple health risk behaviors. Similarly, the more adverse childhood experiences reported, the more likely the person was to have heart disease, cancer, stroke, diabetes, skeletal fractures, liver disease, and poor self-rated health as an adult.

Abuse and other adverse childhood experiences, which the study suggests lead to adoption of health risk behaviors as coping devices, may be two of the basic causes that underlie health risks, illness, and death and could be identified by routine screening of all patients, says Dr. Robert Anda of CDC's National Center for Chronic Disease Prevention and Health Promotion and a lead researcher on the study.

Emory University principal investigator and pediatrician, Dr. Dale Nordenberg, emphasized that pediatric professionals must provide support as early as possible to safeguard and promote lifelong psychosocial and physical health. "This study will help pediatric health care professionals to appreciate that victims of abuse may experience long-term health effects and even years of life lost," he says.

Felitti suggests that adults who have had negative childhood experiences would benefit if they could talk about them with someone they trust.

People who have been abused as children are uncomfortable talking about their experiences, but that is exactly what they should start doing, says Felitti. If people share their emotionally painful past with a spouse or sibling or someone they trust, it can start the healing process."

Kaiser Permanente, CDC, and Emory University plan to continue their collaboration and to translate Kaiser Permanente's experience in family-based interventions into the development of programs that could serve as models for communities throughout the country.

The *American Journal of Preventive Medicine* is the official journal of the American College of Preventive Medicine and the Association of Teachers of Preventive Medicine. The journal is published by Elsevier Science in New York. The ACE study will eventually be available on the Internet via AJPM Online, which can be found at <http://www.elsevier.com/locate/ajpmonline>. Basic information on the journal is also available at <http://www.elsevier.com/locate/amepre>. More information about CDC and its programs is available on its web site: <http://www.cdc.gov>.

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**A Decade-long and Ongoing Collaboration between Kaiser Permanente's Department of Preventive Medicine in San Diego, California, and the Centers for Disease Control and Prevention.**

# The Adverse Childhood Experiences Study

## The Effects of Adverse Childhood Experiences on Adult Health and Well Being

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### **What are Adverse Childhood Experiences (ACEs)?**

**Growing up (prior to age 18) in a household with:**

- *Recurrent physical abuse.*
- *Recurrent emotional abuse.*
- *Sexual abuse.*
- *An alcohol or drug abuser.*
- *An incarcerated household member.*
- *Someone who is chronically depressed, suicidal, institutionalized or mentally ill.*
- *Mother being treated violently.*
- *One or no biological parents.*
- *Emotional or physical neglect.*

*Why is it important to know about Adverse Childhood Experiences?*

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# Adverse Childhood Experiences Study

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## About The Adverse Childhood Experiences Study

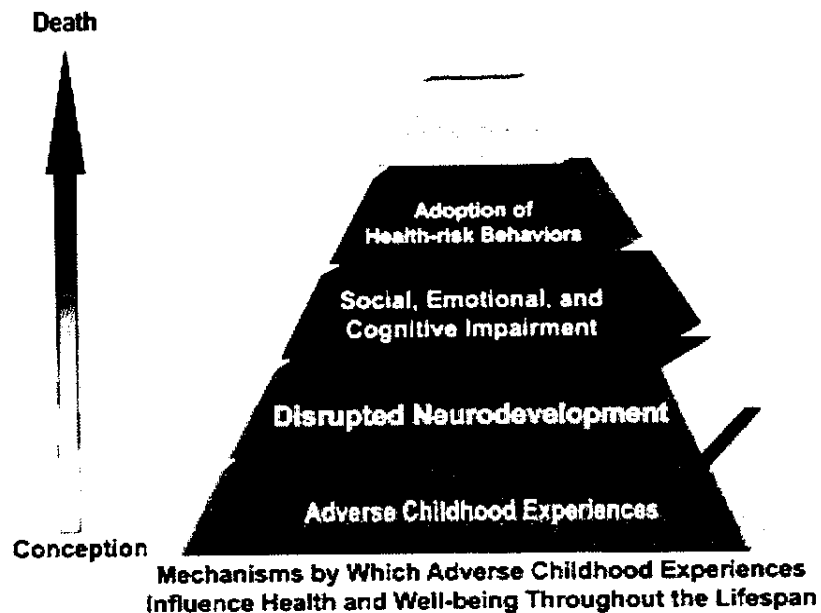
### Why is it important to know about the Adverse Childhood Experiences Study?

Because it provides compelling evidence that:

- ACEs are surprisingly common.
- They happen even in "the best of families".
- They have long-term, damaging consequences.

The pyramid below helps visualize the process by which harsh experiences such as abuse, neglect, and loss of birth parent(s) during childhood result in health problems in adulthood.

For deeper insight into the definition, frequency, presence, and consequences of Adverse Childhood Experiences, read the downloadable documents available at our [ACE-related Publications](#) page.



**"The question of what determines adult health and well being is important to all countries..."**



"The question of what determines adult health and well-being is important to all countries. The Adverse Childhood Experiences (ACE) Study(1) is a major American research project that poses the question of whether, and how, childhood experiences affect adult health decades later. This question is being answered with the ongoing collaboration of Robert Anda, MD at the Centers for Disease Control (CDC) and the cooperation of 17,421 adults at Kaiser Permanente's Department of Preventive Medicine in San Diego, California. Kaiser Permanente is a multispecialty, prepaid, private health insurance system or Health Maintenance Organization [HMO]. The findings from the ACE Study provide a remarkable insight into how we become what we are as individuals and as a nation. They are important medically, socially, and economically(2). Indeed, they have given us reason to reconsider the very structure of primary care medical practice in America.

The ACE Study reveals a powerful relationship between our emotional experiences as children and our physical and mental health as adults, as well as the major causes of adult mortality in the United States. It documents the conversion of traumatic emotional experiences in childhood into organic disease later in life. How does this happen, this reverse alchemy, turning the gold of a newborn infant into the lead of a depressed, diseased adult? The Study makes it clear that time does not heal some of the adverse experiences we found so common in the childhoods of a large population of middle-aged, middle class Americans. One does not 'just get over' some things, not even fifty years later(3)."(4)

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## ACE Study Publications

November, 2003

Dear Colleague: Attached is a list of publications from the Adverse Childhood Experiences (ACE) Study, plus pending articles. We soon will start analysis of the prospective arm of the Study; this will show the economic consequences in medical care of abusive childhood experiences, on average a half-century earlier. A book for general readership is planned. You may track future publications or read abstracts by entering the free National Library of Medicine web site, Pub Med, at <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi> and entering *Felitti* or *Anda* under 'author name'.

Vincent J. Felitti, MD

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**Under Review or Submitted**

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# The ACE Study

## The ACE Study - How Child Abuse Contributes to the National Health Care Crisis

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A 1998 study of 19,000 adults through a national HMO found that many of the most common causes of death and disability in this country may be linked to adverse emotional experiences in childhood. "Abused children may use behaviors such as cigarette smoking, heavy alcohol use, overeating, promiscuity, and drug use as a way of coping with damaging experiences much earlier in life," says a principal investigator of the Adverse Childhood Experiences (ACE) Study, Dr. Vincent Felitti, Chief of Preventive Medicine at Kaiser Permanente in San Diego.

Traditionally viewed as public health problems, these behaviors appear to be coping mechanisms for people who have had adverse childhood experiences, the study found. "The ACE Study reveals a powerful relationship between our emotional experiences as children and our physical and mental health as adults," says Dr. Felitti. The Study makes it clear that time does not heal some of the adverse experiences we found so common in the childhoods of a large population of middle-aged, middle class Americans. One does not 'just get over' some things..."

Felitti suggests that adults who have had negative childhood experiences would benefit if they could talk about them with someone they trust. People who have been abused as children are uncomfortable talking about their experiences, but that is exactly what they should start doing, says Felitti. If people share their emotionally painful past with a spouse or sibling or someone they trust, it can start the healing process.

The inference is that if we can intervene in an abused or neglected child's life early on, we will prevent *billions* of dollars in health care costs a generation from now. These are costs that are currently being borne by taxpayers and corporations because of adverse childhood experiences a generation ago.

For information about the ACE Study, visit [www.cestudy.org](http://www.cestudy.org)



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# Dr. Vincent Felitti & Dr. Robert Anda



A new study led by Dr. Vincent Felitti and Dr. Robert Anda looks for the underlying reasons causing risk behavior such as drug abuse, smoking and obesity. Their comprehensive research, known as the Adverse Childhood Experiences Study, examines the effects of childhood abuse and household dysfunction on adult emotional and physical status. The researchers find a strong correlation between adverse childhood experiences and risk behavior. For example, of the respondents who were sexually abused, 25% began smoking before the age of fourteen, whereas only 9% of non-abused respondents smoked before the age of fourteen. The correlation between adverse experience and risk-behavior emphasizes the importance of societal intervention in child abuse cases.



Listen



Read the Transcript



Discuss



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*"Having three or four adverse childhood experiences would increase your risk of being an alcoholic six-, seven-, or eight-fold. It would increase your risk of attempting suicide up to twenty- or thirty-fold."*



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# Drug Facilitated Sexual Assault

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# Common Elements of DFSA

- Social or business situation that seems non-threatening
- Victim consumes drink
- “Curtain comes down” on victim’s awareness within a short time
- Loss of consciousness and memory for a period of time
- Moved to another location
- Unsure if sexually assaulted or identify signs they have been

# Detectability Before Ingestion

- Most drugs will dissolve or disperse in beverages or food
- Most medications are bitter
  - May not be noticed if beverage is strong
- Tablets and some capsules have inert fillers that will not dissolve
  - May not be noticeable depending on beverage, physical and social circumstances and if victim is intoxicated

# Drugs Reportedly Used to Commit DFSA

- Ethanol
- Zolpidem
- Barbiturates
- Benzodiazepines
  - Flunitrazepam
  - Clonazepam (Clonapin, Rivotril)
  - Lorazepam
  - Alprazolam (Xanax)
  - Triazolam (Halcion)
  - Chlordiazepoxide
  - Diazepam
  - Temazepam
- GHB, GBL, and 1,4-BD
- Ketamine
- Opiates
- Antihistamines
- Hallucinogens
- Sedative Antidepressants
- Chloral Hydrate
- Muscle Relaxants
- Scopolamine
- Herbal Sedatives

# Challenges With Drugs That Are Used

- Dosages
- Number of Candidates
- Pharmacokinetics- What your body does to the drug
- Pharmacodynamics-What the drug does to your body



# ALCOHOL



# CLUB/DESIGNER DRUGS

- Commonly associated with rave clubs or dance clubs
- High-volume music, high-tech entertainment and easy access to drugs
- Produce increased stamina and intoxicating highs
- Colorless, odorless, and tasteless

# GHB

## Gamma Hydroxy Butyrate

- Naturally occurring metabolite of GABA
- Central nervous system depressant
- Schedule 4A drug in Alaska
- G, Liquid Ecstasy, GHBeers, Grievous Bodily Harm, Scoop, Jib, GH Buddy, Easy lay, Georgia Home Boy, Salty Water and liquid X
- Detectable <8hours in blood and <12 in urine\*
- GBL

It's Nothing But Luck



# APPEARANCE:

- Clear liquid form, slightly thicker than water and is odorless. Has a salty taste. White powder form similar to cocaine. The powder form becomes a liquid when exposed to the air after a time.



# DURATION OF EFFECTS

- Onset: 10 to 20 minutes
- Duration: 1 to 4 hours
- After effects: 2 to 4 hours

# EFFECTS- UNPREDICTABLE

- Rapid onset of intoxication, increased energy, anxiety, loss of inhibition, loss of coordination, enhanced sexual experience
- Nausea, impaired judgement, amnesia, dizziness, slow heart rate, muscular fatigue
- Passing out, sedation, respiratory depression
- Coma and death



# MORE SIDE EFFECTS

- Extremely dose sensitive
- Quality of the product?
- “Beginners” often vomit, experience body jerking and loss of bowel and bladder control
- May “carpet out” on heavy dose or experience “head snap”. Breaths may slow to six or less per minute.
- Addiction

# MDMA (ECSTACY)

- Methylenedioxymethamphetamine
- Central nervous system stimulant
- Rarely taken with alcohol
- Schedule 2A drug in Alaska
- “E”, Ecstasy, rolls, pills, beans, M&M’s, Adam, clarity, doctor, XTC, X, M, hug drug and love drug.
- May be detectable in blood < 24 hours

# APPEARANCE

- Powder form varies in color from white to tan to brown and has the same texture as cocaine
- Capsule form is either a clear gelatin capsule or capsule filled with powder
- Pill form varies in color
- Wafer form is about the size of vitamin C



# DURATION OF EFFECTS

- Onset: 10 to 20 seconds to 20 to 40 minutes
- Duration: 4 to 6 hours
- After effects: hangover 1 to 2 days

# EFFECTS

- Euphoria, hyperexcitability, rapid heart rate, teeth grinding, mild hallucinogen
- Nervousness, eye twitching, scratching, panic attacks, dizziness, muscle cramping
- Seizures, loss of consciousness, heat stroke, death
- Cocktailing/bumping (mixing) both to enhance or mask effects.....dangerous

# HEALTH HAZARDS

- Addiction, confusion, depression, sleep problems, anxiety and paranoia
- Fatalities from rave parties usually involve the stimulant properties; dancing for extended periods can lead to dehydration, hyperthermia, heart or kidney failure
- Use damages serotonin neurons; mood, memory, sleep and appetite

# PMA

- Para-methoxy-amphetamine, 4-MA
- Powerful hallucinogenic stimulant
- Cheaper and easier to manufacture than ecstasy and more dangerous
- Over a dozen confirmed deaths
- White or tan with a Mitsubishi logo and usually thicker



# KETAMINE

- Dissociative anesthetic
- Similar to PCP
- Used by veterinarians
- Schedule 4A drug in Alaska
- Special K, “K Wave, “K”, Kat, “K” Hole and “K” Head
- Detectable 24 hours in blood and 48 hours in urine

# APPEARANCE

- Clear liquid form contained in 10 ml glass vial with ketamine written on it
- Powder form which is white in color and closely resembles cocaine



# DURATION OF EFFECTS

- Onset: 1 to 20 minutes
- Duration: 20 to 30 minutes
- Residual: effects 1 hour after initial dose

# EFFECTS

- Hallucinations, euphoria, loss of inhibition, quick burst of energy, drunken feeling.
- Confusion, ringing in ears, tunnel vision, numbness of body, out of body experience.
- Mental depression, loss of balance, no sense of time, disassociation from reality
- Shortness of breath, vomiting when mixed with alcohol, and coma.

# ROHYPNOL

- Flunitrazepam
- Central nervous system depressant
- Schedule 4A drug in Alaska
- 10 times the potency of Valium
- Roofies, Dulcita, Wheel, “R-2”, Shay, Roach, Landing Gear and Mind Eraser
- Detectable in urine 96 hours and in blood 24 hours

# APPEARANCE

- White or blue colored tablets, single or doublecross score line on back and R.H., Roche or Ruffies on the front of the tablet





# New Tablets

- Olive Green Color
- “542” on one side and single score on the other
- Blue dye released when dissolved
- Injectable Rohypnol

# DURATION OF EFFECTS

- Onset: 15 to 20 minutes/peak 1 to 2 hours
- Duration: 8 hours
- Residual: hangover 12-24 hours

# EFFECTS

- Loss of inhibition, drunken state, dizziness, tranquility, slurred speech, slowed breathing, headaches, confusion, hallucinations, affects judgement, black outs, memory loss, coma and death

# Other Benzodiazepines

- Clonazepam (Clonapin, Rivotril)
  - Anticonvulsant, identical effects to Rohypnol and LEGAL
- Alprazolam (Xanax)
  - Antidepressant and anxiolytic agent
  - This drug is LEGAL and is difficult to test for
- Triazolam (Halcion)
  - Used for insomnia
  - out of the body more quickly than Rohypnol
  - detectable in urine 12-24 hours

# Difficulties Surrounding Investigations

- Vast number of drugs used to commit the crime
- Reporting of the crime (voluntary or illegal drug use and loss of memory)
- Collection of proper specimens
- Lack of findings in the forensic toxicology laboratory

# Difficulties Continued

- Victims lack of resistance, impaired motor skills, reduced inhibition, drowsiness, and memory loss
- No physical symptoms, no ability to “resist” or give consent
- Consent all most always the defense
- “She was really into it. In fact, she was really wasted at the party and was flirting with me all night. We both had a good time”

# Drug Facilitated Sexual Assault

- Gaps, omissions and inconsistencies in victim's statement
- Rapid change in victim's intoxication level
- Victim self-reporting abnormal behavior
- Relatively low PBT or blood alcohol level
- Under 96 hours-obtain urine sample in sterile container with sealable top (100 ml)
- Blood specimens within 24 hours (10 ml)

# Memorandum of Agreement

- DPS Director's Directive T-2000-23
- State Medical Examiner's Laboratory Assistance
- Laboratory services not currently available from the Crime Lab
- Questions regarding tests, packaging, and interpretation of lab reports should be directed to one of the doctors



# Without Consent

## AS 11.41.470 (8) (A) (B)

- with or without resisting, is coerced by the use of force against a person or property, or by the express or implied threat of death, imminent physical injury or kidnapping to be inflicted on anyone or
- *is incapacitated as a result of an act of the defendant*

# Incapacitated AS 11.41.470 (2)

- Temporarily incapable of appraising the nature of one's own conduct or physically unable to express unwillingness to act.

# Charges

May be the difference between sexual assault in the first degree or second degree.

# Victim Interview

- Ask open ended questions
- Allow victims to tell the whole story completely
- Assure victim that you do not blame her
- Assure victim that delayed reporting is natural in sexual assault cases

# Victim Interview

- Determine the relationship to the suspect
- Location of incident and description
- “Personal” use of drugs
- Amount of alcohol consumed
- How was this experience different
- What symptoms did the victim describe

# Victim Interview

- Tolerance level to drugs or alcohol
- Type of normal sexual activity
- Identify any and all drugs prescribed or taken
- Did the victim take the the intoxicating substance knowingly, voluntarily or surreptitiously

# Victim Interview

- Victim's last recollection of physical well-being (symptoms before passing out)
- How long was the victim unconscious
- Victim missing any property
- How was the victim dressed before and after
- Any clothing missing, torn or replaced incorrectly on the body
- Number of times the victim has urinated

# Victim Interview

- Did the suspect provide the drink or the drug
- Did the suspect use it
- Victim's perception of suspect's intoxication level
- Does the victim have any knowledge of other victims or similar circumstances



# Witnesses (Before, During and After)

Establish normal behavior for the victim:

- Roommates
- Friends/Associates
- Activity prior to the incident

# Witness Interview

## Activity Before the Incident

- Restaurant/Bar Personnel, Patrons, Friends
  - Was there a problem, disturbance, exhibition of sexual activity or undressing?
  - Was the victim walking or being carried?
  - Appearance of the victim (intoxication)
  - Anyone sick or vomiting

# Witness Interview

## Activity After the Incident

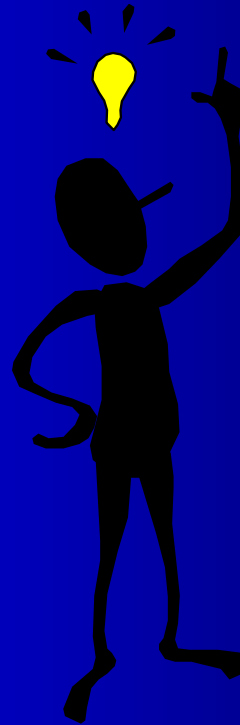
- Describe victim's behavior and appearance
- First person victim told
- Statements made by victim
- Victim's level of intoxication

# What about?

- Setting up a controlled buy
- Is the suspect a dealer or a buyer
- Interview suspect friends, neighbors or local school kids to see who is selling drugs in the area
- Background information on suspect
- Search warrants, scene, suspect forensic exam
  - What are we looking for.....
  - Examples of search warrants from Trinkka

# REMEMBER

- Time line
- Dramatic changes in victim's behavior
- Urine collection



# Internet Resources

- [www.dancesafe.org/](http://www.dancesafe.org/)
- [www.clubdrugs.org/](http://www.clubdrugs.org/)
- [www.soacor.com/](http://www.soacor.com/)
- [www.ashesonthesea.com](http://www.ashesonthesea.com)
- [www.usdoj.gov/dea/concern/concern.htm](http://www.usdoj.gov/dea/concern/concern.htm)
- [www.fbi.gov/hq/lab/fsc/backissu/april1999/lebeau.htm](http://www.fbi.gov/hq/lab/fsc/backissu/april1999/lebeau.htm)
- [www.health.org](http://www.health.org)
- [www.drugidbible.com](http://www.drugidbible.com)

