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September 3, 2020



ADVANCING HEALTH EDUCATION & RESEARCH







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# The Repressed Role of Adverse Childhood Experiences in Adult Well- Being, Disease and Social Functioning: Turning Gold into Lead

**Dr Vincent J. Felitti**

September 3, 2020



ADVANCING HEALTH EDUCATION & RESEARCH



Center for Innovation and Resources, Inc.

# **The *Repressed* Role of Adverse Childhood Experiences in Adult Well-being, Disease, and Social Function:** *Turning gold into lead*



A collaborative effort between  
  
Kaiser Permanente and  
  
US Centers for Disease Control and Prevention



Vincent J. Felitti, MD  
**CALIFORNIA ACES ACADEMY**  
Webinar  
September 3, 2020

ACE Study Co-Investigators:  
Robert F. Anda, M.D.  
Vincent J. Felitti, M.D.

# The ACE Study Summary of Findings:

- Adverse Childhood Experiences (ACEs) are *very* common, and disturbing, and hence are mostly unrecognized.
- They are powerful predictors of adult social malfunction, emotional distress, health risks, disease, and premature death.
- This combination makes ACEs *the leading* determinant of the health, social well-being, and economy of the nation.



# What is the *Core* Diagnosis Here?



Age 8



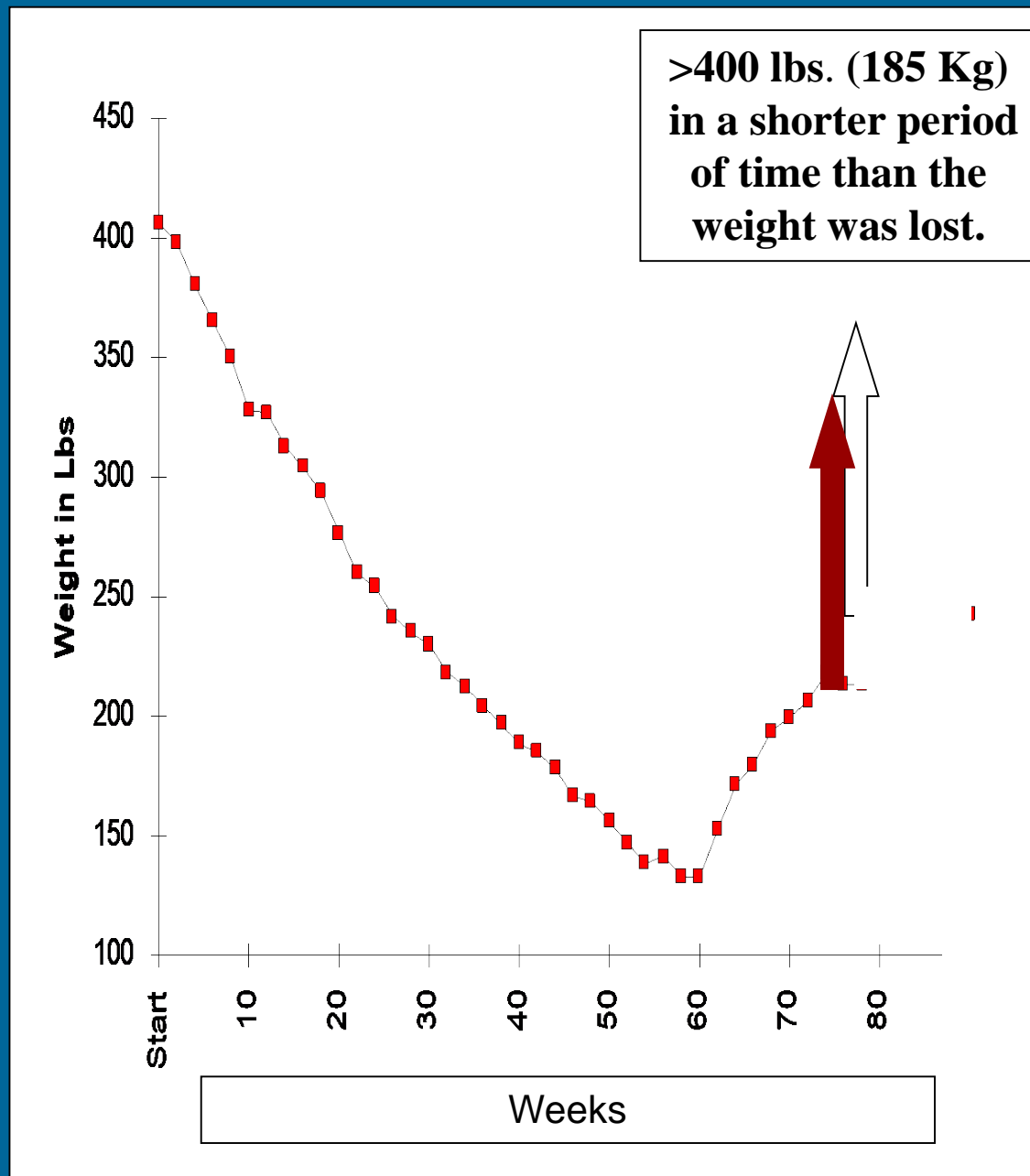
Age 28

In 51 weeks:  
408 ➡ 132 lbs.



Age 29

Which photo represents the *patient's* problem?



# ACE Study Design

## Survey Wave 1

n=13,000

71% response

*All medical  
evaluations  
abstracted*

## Survey Wave II

n=13,000

*All medical  
evaluations  
abstracted*

vs.

*Present  
Health Status*

17,337 adults

## Mortality:

National Death Index

## Morbidity & Cost of medical care:

Hospital Discharges

Doctor Office Visits

Emergency Room Visits

Pharmacy Costs

# Categories of Adverse Childhood Experiences

---

Abuse, by Category	Prevalence
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 <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...

<i>ACE Score</i>	<i>Prevalence</i>
0	33%
1	25%
2	15%
3	10%
4	6%
5 or more	11%*



- 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.



## Risk Behaviors: 'Addictions'

# Smoking to Self-Medicate



Emotional *benefits* of addiction

Addiction is the unconscious,  
compulsive use of psychoactive  
materials or agents.

*“It’s hard to get **enough** of something  
that **almost** works.”*

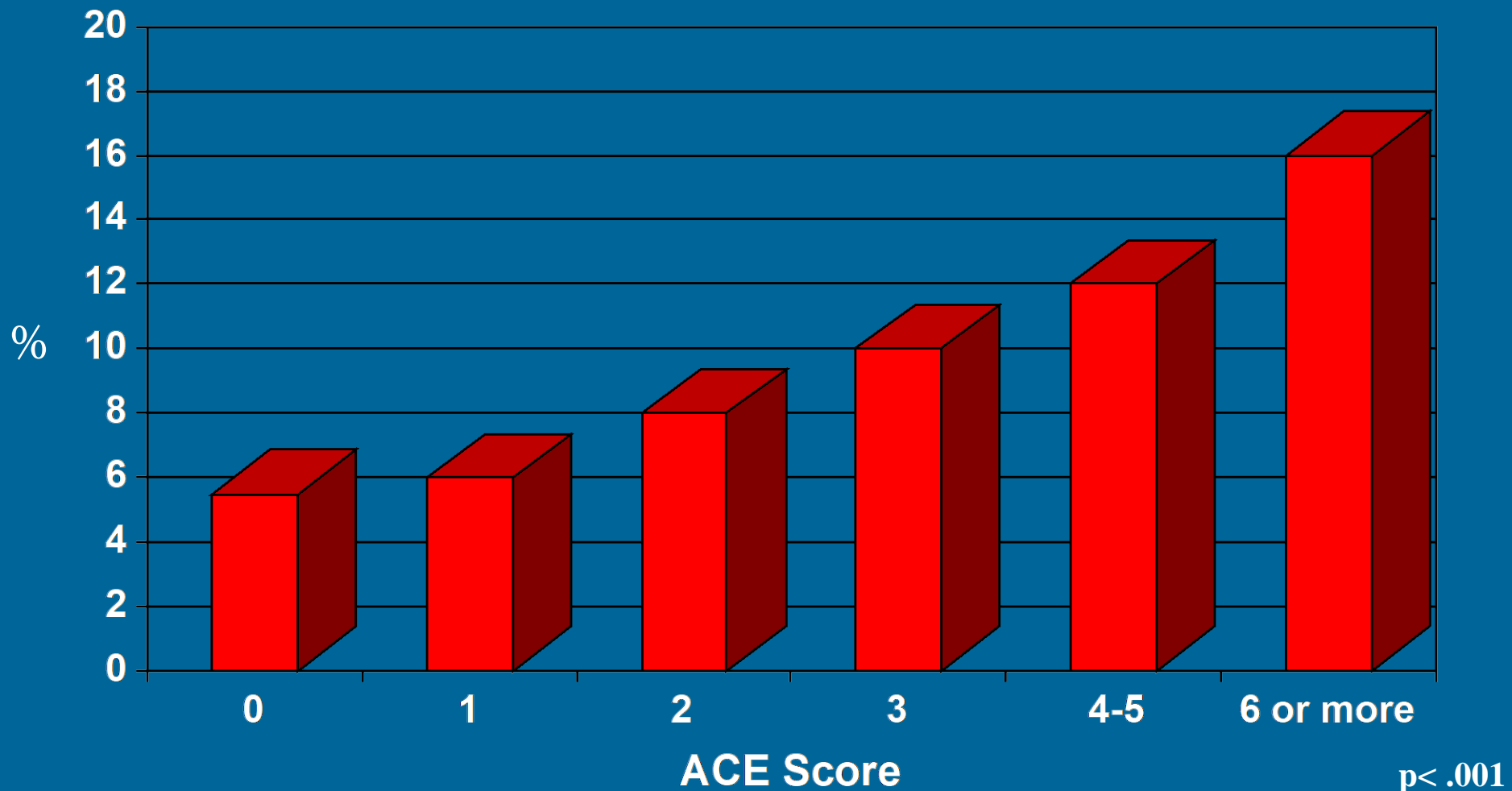
The traditional concept:

“Addiction is due to the characteristics intrinsic in the molecular structure of some substance.”

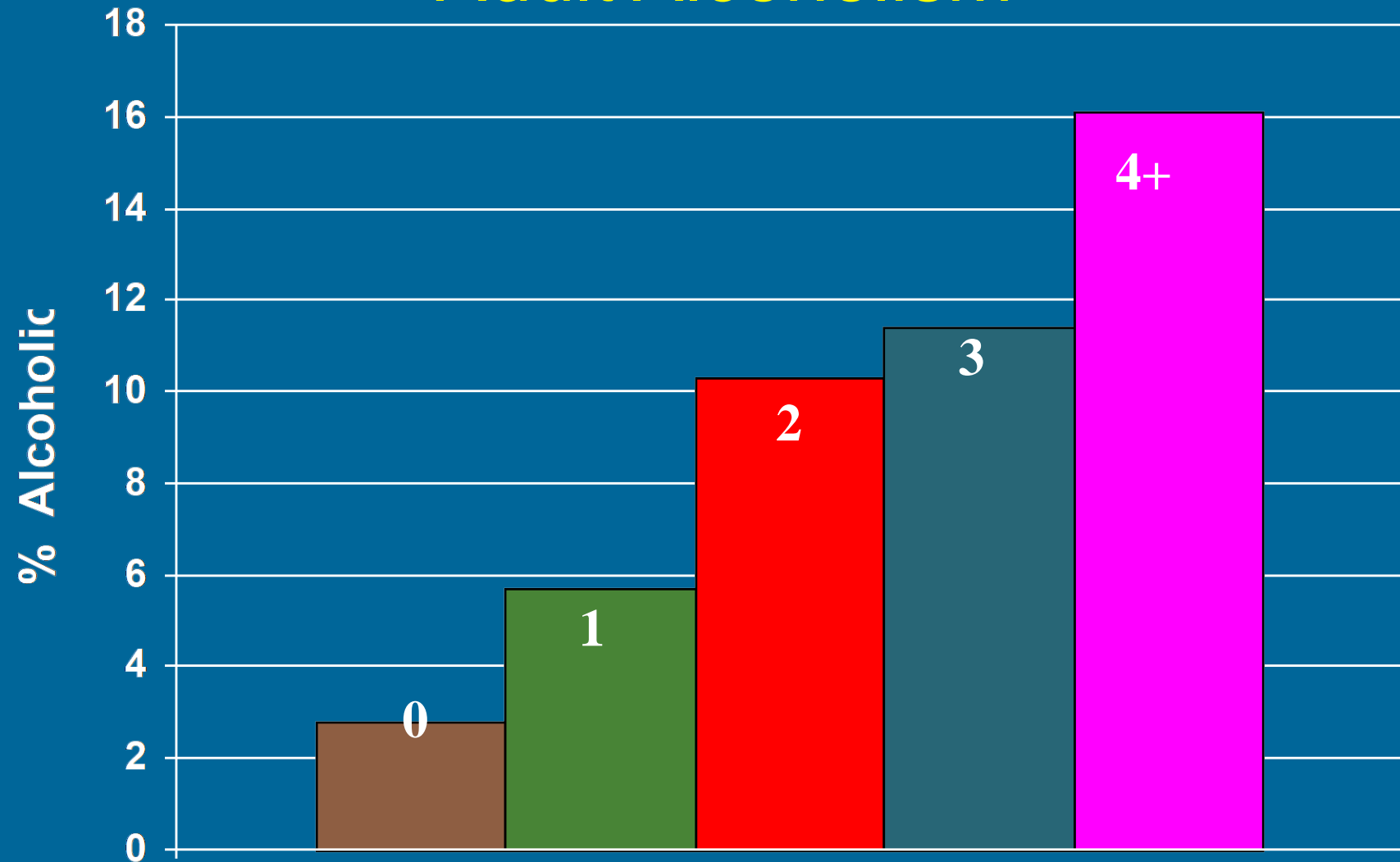
**In the ACE Study, we found that:**

**“Addiction highly correlates with characteristics intrinsic to that individual’s childhood experiences.”**

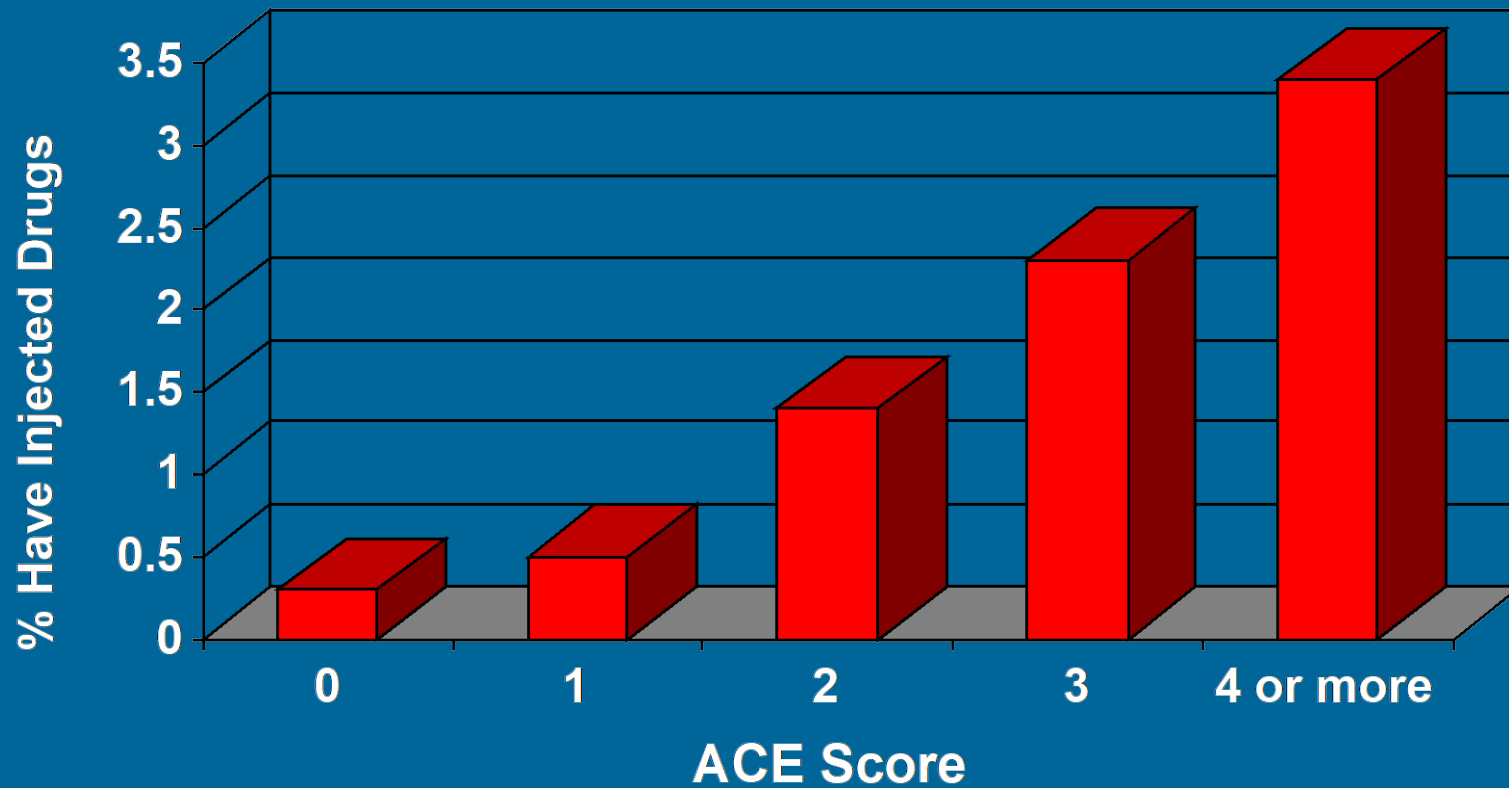
# Adverse Childhood Experiences vs. Smoking as an Adult



## Childhood Experiences vs. Adult Alcoholism



## ACE Score vs Intravenous Drug Use



$p < 0.001$

# JAMA ad from the 1940s, for the Profession

**'Amphedroxyn Hydrochloride'**  
(Methamphetamine Hydrochloride, *Lilly*)



One Pint (475 cc.) No. 34

**ELIXIR  
AMPHEDROXYN  
HYDROCHLORIDE**  
(Methamphetamine Hydrochloride)  
2.5 mg. per 4 cc.

Contains Alcohol 5 Percent  
Contains 100 cc.

Methamphetamine Hydrochloride  
2.5 mg. per 4 cc.

Contraindicated in combination with  
other sympathomimetic amines, especially  
epinephrine, norepinephrine, and  
phenylephrine. Hypertension, tachycardia,  
anxiety, and insomnia may be produced.  
**CAUTION:** It has been reported that  
in the dose of 10 mg. or more, it may  
produce a psychosis resembling  
schizophrenia.

100% STRENGTH  
*Lilly*  
ELI LILLY AND COMPANY  
INDIANAPOLIS, U.S.A.

Tablets  
**AMPHEDROXYN  
HYDROCHLORIDE**  
2.5 mg.  
100% STRENGTH  
*Lilly*  
ELI LILLY AND COMPANY  
INDIANAPOLIS, U.S.A.

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*Lilly*  
ELI LILLY AND COMPANY  
INDIANAPOLIS, U.S.A.

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.

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.

*Lilly*  
SINCE 1876



## *Functional* aspects of ‘dysfunctional’ behavior

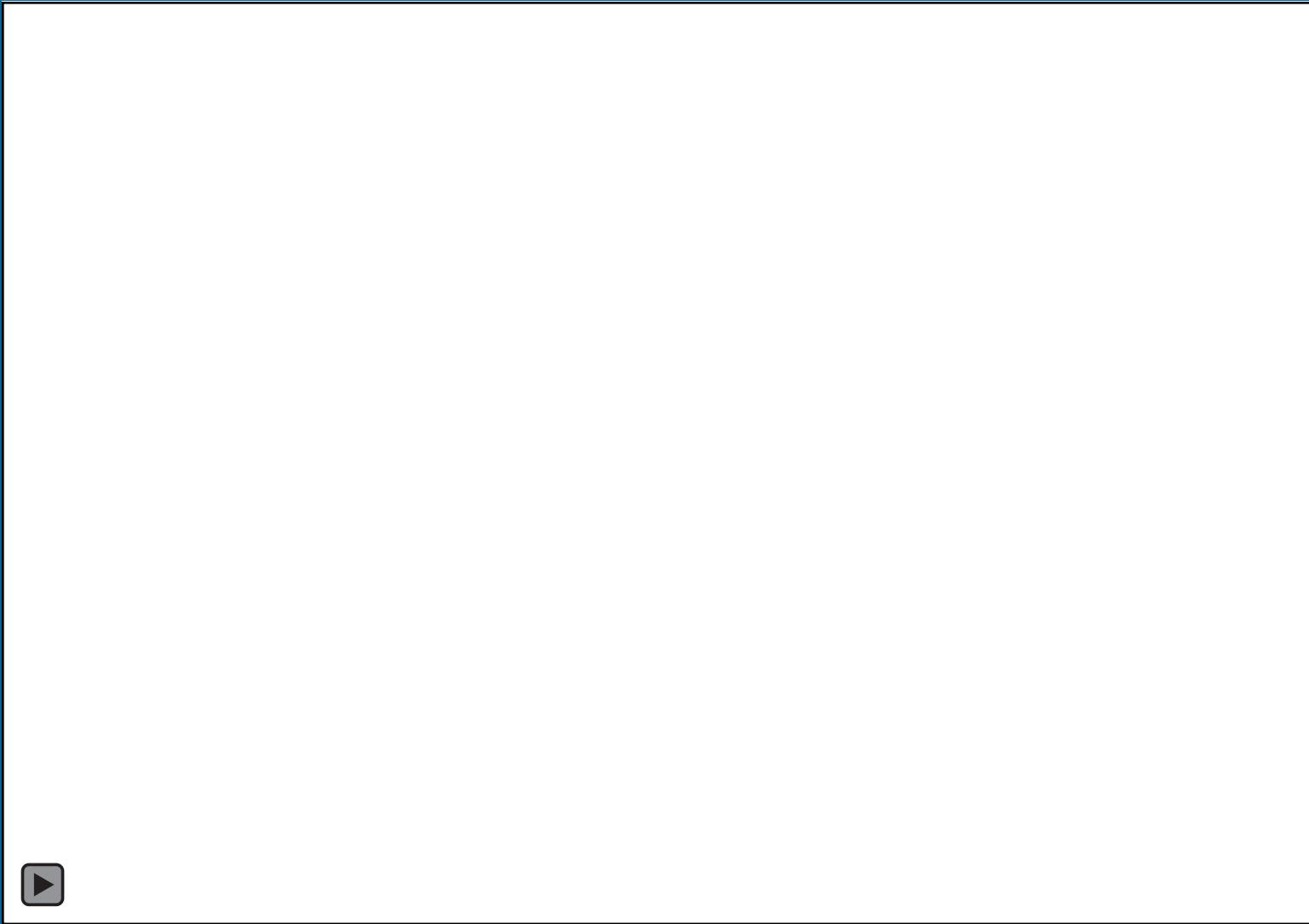


Lost 158 pounds in Program.  
But, why did he *gain* it?

# The Hidden Threat of Weight Loss



# A Former Pediatric Patient Speaks Clearly



# Depression:

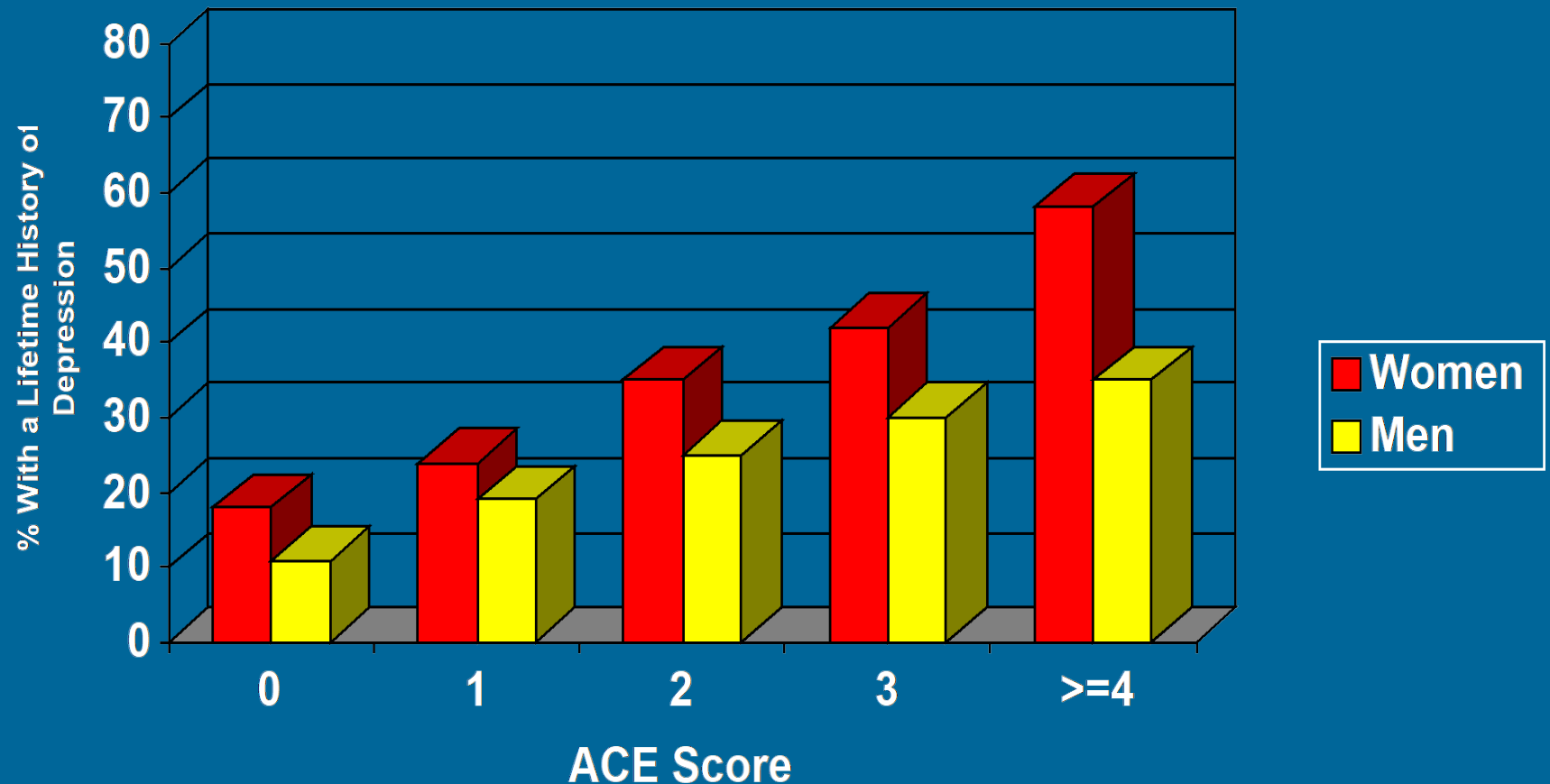
Most people say depression is a disease.  
Many say depression is genetic.  
Some say it is due to a chemical imbalance.



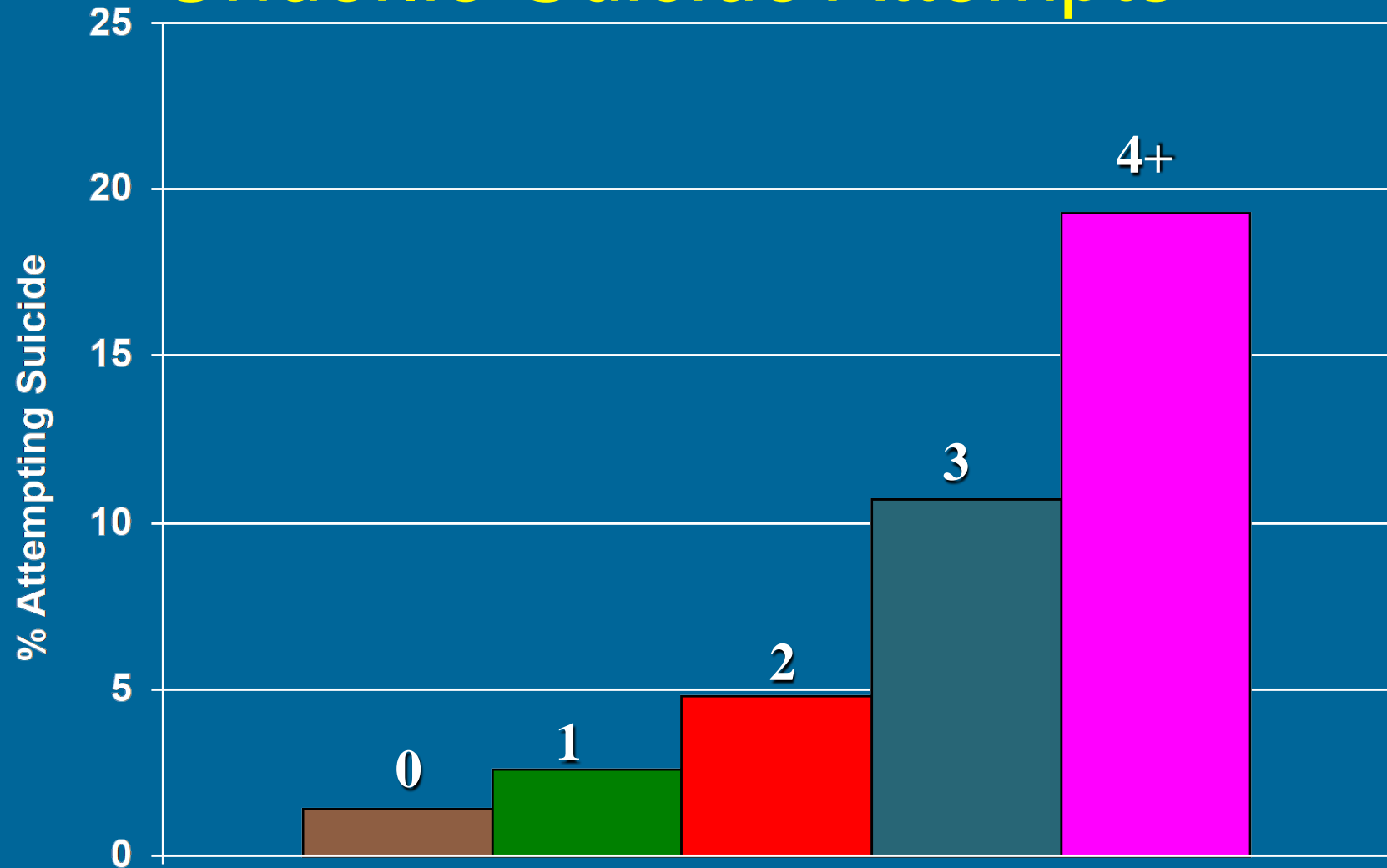
What if depression were *not* a disease,  
but a *normal response* to  
abnormal life experiences?



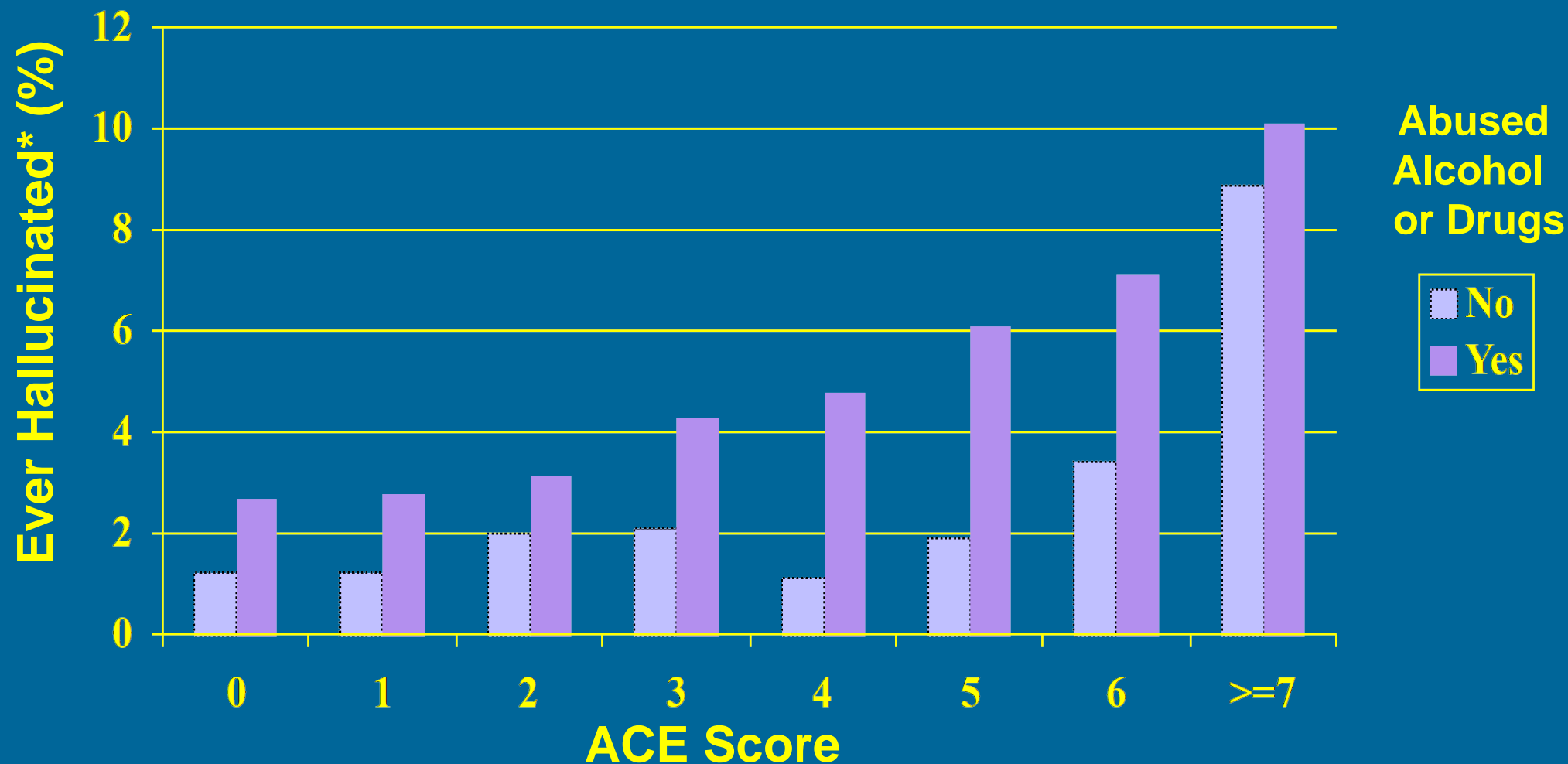
# Childhood Experiences Underlie Chronic Depression



# Childhood Experiences Underlie Suicide Attempts



# ACE Score and Acknowledged Hallucinations

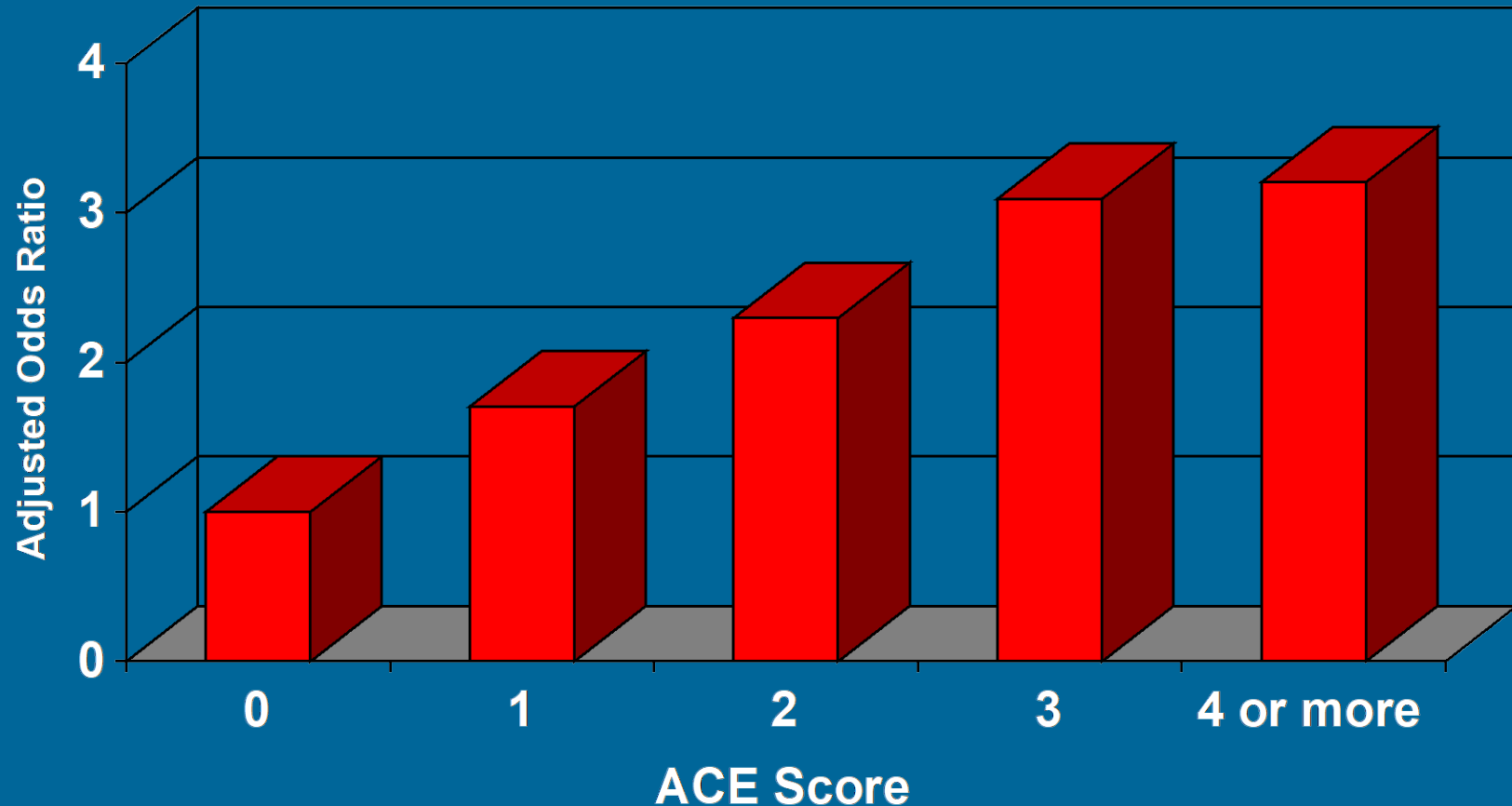


\*Adjusted for age, sex, race, and education.

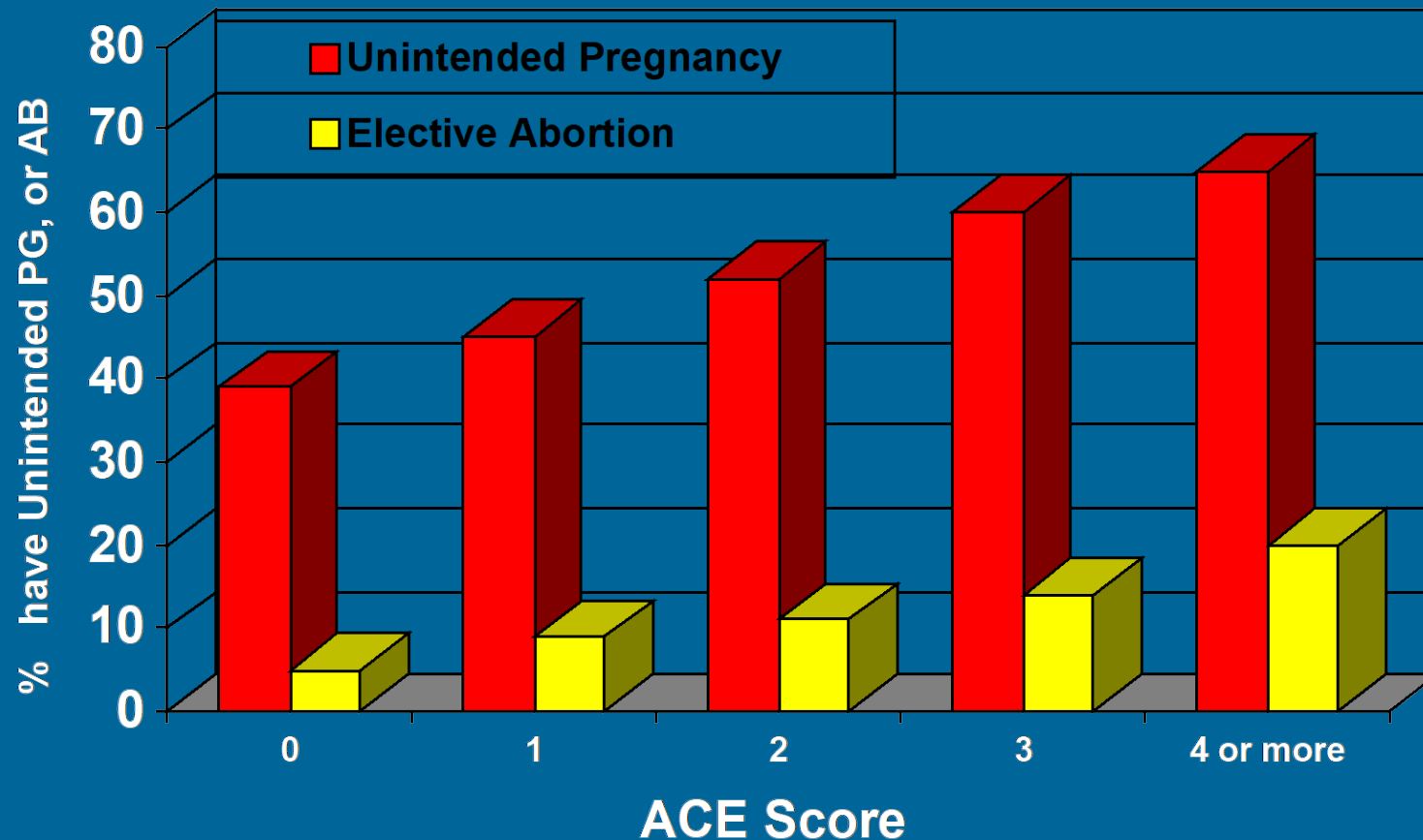


## Health risks

# Adverse Childhood Experiences vs. Likelihood of > 50 Sexual Partners



# ACE Score vs. Unintended Pregnancy or Elective Abortion



# 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



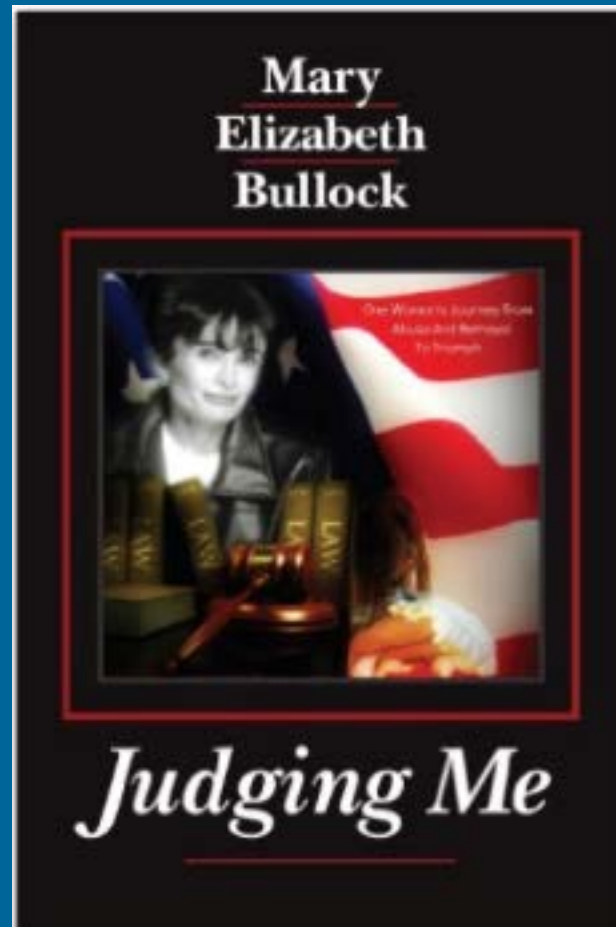
After correction for age, race, education, and conventional Framingham risk factors like smoking and diabetes.

*Circulation, Sept. 2004*

# Other Biomedical Disease



# Resilience?



# Adverse Childhood Experiences determine the likelihood of the ten most common causes of death in the United States.

Top 10 Risk Factors: smoking, severe obesity, physical inactivity, depression, suicide attempt, alcoholism, illicit drug use, injected drug use, 50+ sexual partners, h/o STD.

# Pathways from ACEs to Disease

- 1) By long-term effects of Coping Mechanisms.
- 2) By toxic CNS Hyperstimulation.
- 3) By Epigenetic effects.

With an ACE Score of 4 or more,  
the majority of adults have multiple  
risk factors for these diseases  
or the diseases themselves.



Many chronic diseases  
of adults are determined  
decades earlier, in childhood.

Not by childhood disease, but by life experiences.

# A Public Health Paradox

Many of our most common and intractable public health problems are the result of unconsciously attempted solutions to personal problems dating back to childhood, buried in time, and concealed by shame, by secrecy, and by social taboo.

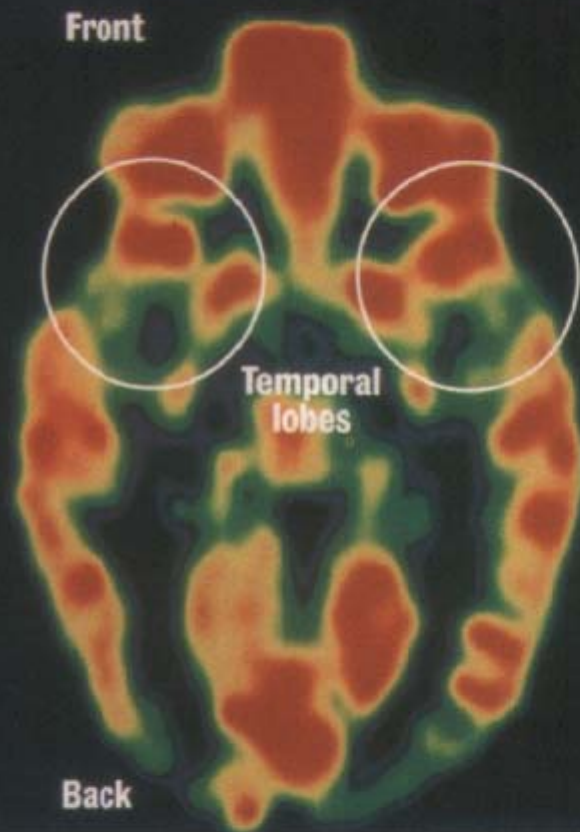
The risk factors  
underlying these adult  
diseases often are effective  
short-term *coping* devices.

## Evidence from the ACE Study Indicates:

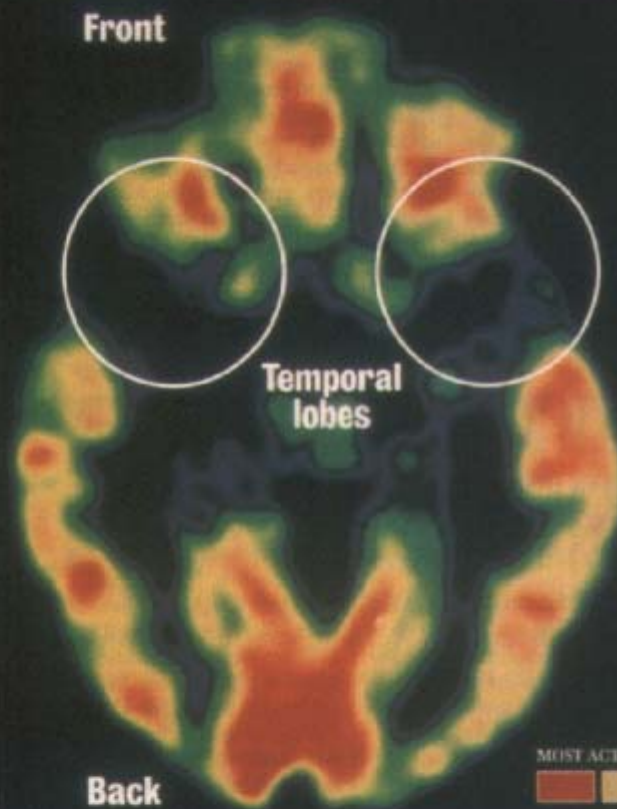
Adverse childhood experiences are our *main* cause of health risk behaviors, disease, disability, premature death, and healthcare costs.

## 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 wire the circuits.



Front



## 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.

MOST ACTIVE      LEAST ACTIVE

A color scale legend for PET scans. It consists of five colored squares in a row: red, orange, yellow, green, and blue. The red square is labeled 'MOST ACTIVE' and the blue square is labeled 'LEAST ACTIVE'.

# Improving the Future



**Child  
health  
and  
well-being  
as it  
stands  
today.**

**Understanding these  
problems commonly exist.**

**Seeking ACE histories  
in medical practice.**

**Adult  
health  
and  
well-being  
as it  
could be.**

## Interventions

# Translating Research into Practice

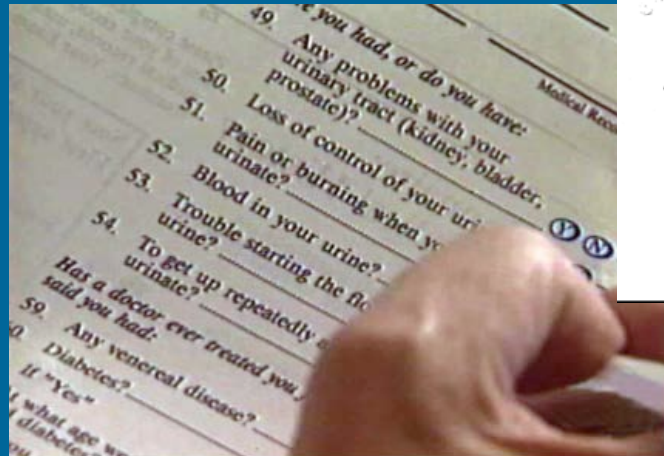
a beginning



1.2 million comprehensive patient 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.



69. Depression or feel "down in the dumps"? ..... (Y) (N) —
70. Much trouble with nervousness? ..... (Y) (N) —
- Do you:*
71. Sometimes drink more than you think is good for you? ..... (Y) (N) —
72. Use street drugs? ..... (Y) (N) —
- Have you ever:*
73. Been raped, or sexually molested as a child? ..... (Y) (N) —
- 73a. As a child, been physically abused? ..... (Y) (N) —
- 73b. As a child, been verbally abused? ..... (Y) (N) —

Includes ACE Questions



# Medical Questions of Documented Value

- Have you lived in a war zone?
- Have you ever 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 been tortured?
- Have you ever been raped?

# Extract from an actual case

## GENERAL HEALTH

- Her health limits activity to some degree.
- Limitations are mostly due to shortness of breath or difficulty breathing.
- Limitations are mostly due to fatigue, tiredness, or lack of energy.
- Her stress level: large
- Doctor visits during the past 12 months: 1 - 4 times
- Hospitalizations over the past 12 months: 0 times
- Patient regularly uses seat belts.
- Patient believes she is more tired and has less energy compared to others.
- She often has trouble falling asleep or staying asleep.
- She often awakens tired after adequate sleep.
- She is more sensitive than other people.
- She is often worried about being ill.
- She often feels hopeless or down in the dumps.
- She has difficulty saying no, or sticking up for herself.
- She has problems controlling her anger.
- She has difficulty caring for herself.
- Patient is having serious problems with her family.
- Patient is having serious problems with her job.
- Patient is having serious problems with her finances.
- Patient has used street drugs.
- Patient would like an HIV (AIDS) test.

## WOMEN'S HEALTH

- Patient does a breast exam: at least once a month
- Patient's last mammogram was: never.
- Patient is still having menstrual periods.
- Patient currently has irregular periods.
- Patient currently has a lot of pain with her periods.
- She has not been sexually active within the past year.
- She is no longer sexually active.
- Type of birth control used: tubal ligation
- Number of pregnancies: four or more
- Number of live births: three
- Patient has been physically abused as a child.
- Patient has been verbally abused as a child.
- Patient has been sexually molested as a child or adolescent.
- Patient has been threatened or abused as an adult by a sexual partner
- Her partner has threatened, pushed, or shoved her.
- Her partner has threatened or abused her children.

## DIGESTIVE

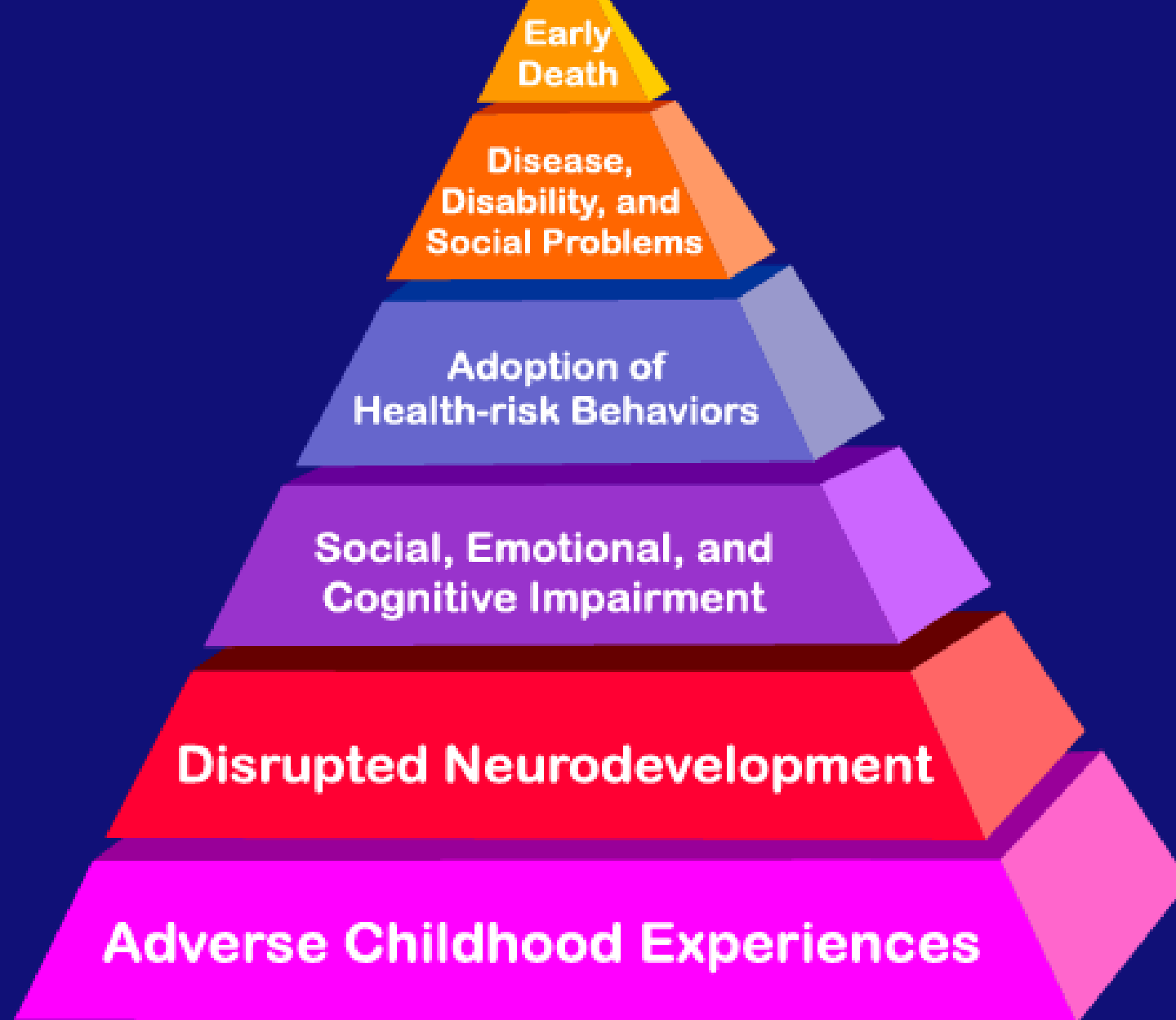
- Patient has had a distinct weight gain during the last year.
- Patient has had indigestion or heartburn during the past year.
- Patient has had recurrent nausea or vomiting during the past year.
- She has recurrent abdominal pain.
- Patient has been diagnosed with esophagitis or esophageal reflux.
- Patient is likely to have some form of alcohol: never.

# Economics of a Biopsychosocial Preventive Approach

- Biomedical evaluation: 11% reduction in DOVs in subsequent year  
(700 patient sample)
- Biopsychosocial evaluation: **35% reduction in DOVs & 11% reduction in ER visits.**  
(135,000 adult patient sample)

Death

Conception



**Mechanisms by Which Adverse Childhood Experiences  
Influence Health and Well-being Throughout the Lifespan**

# Final Insights from the ACE Study

- Adverse childhood experiences are *common* but overwhelmingly unrecognized.
- Their link to major 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.
- Unwittingly treating their 'solution' may be threatening and hence fail.
- Primary Prevention is presently the only feasible *population* approach.
- Change has been resisted, by us, in spite of enormous benefits.

# Practice Implications of the ACE Study

- A biopsychosocial and childhood trauma-oriented approach to medical evaluation has been demonstrated to be feasible, affordable, and acceptable to patients.
- It is possible to move from our current symptom-reactive mode of practice, to start dealing with basic causes, and thereby significantly improve medical care while reducing its cost.
- A childhood trauma-inclusive comprehensive medical history is proposed as the routine entry mechanism into all ongoing care, be it medical, psychological, or institutional.

# Further Information

[www.ACEsAware.org](http://www.ACEsAware.org)

[www.ACEsConnection.com](http://www.ACEsConnection.com)

[www.AVAHealth.org](http://www.AVAHealth.org) (Major current DVD on ACE Study)

[info@CavalcadeProductions.com](mailto:info@CavalcadeProductions.com) (Documentary ACE DVDs)

[www.HumaneExposures.com](http://www.HumaneExposures.com) (3 Insightful Books)

Google, Medline/PubMed, YouTube (“ACE Study” as search words)

ACE Study Publications since 1998 – 89 posted on AVA website:

[www.avahealth.org](http://www.avahealth.org) CALIFORNIA ACES ACADEMY web page

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