

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 the Centers for Disease Control,



AVA Chadwick pre-Conference
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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, 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



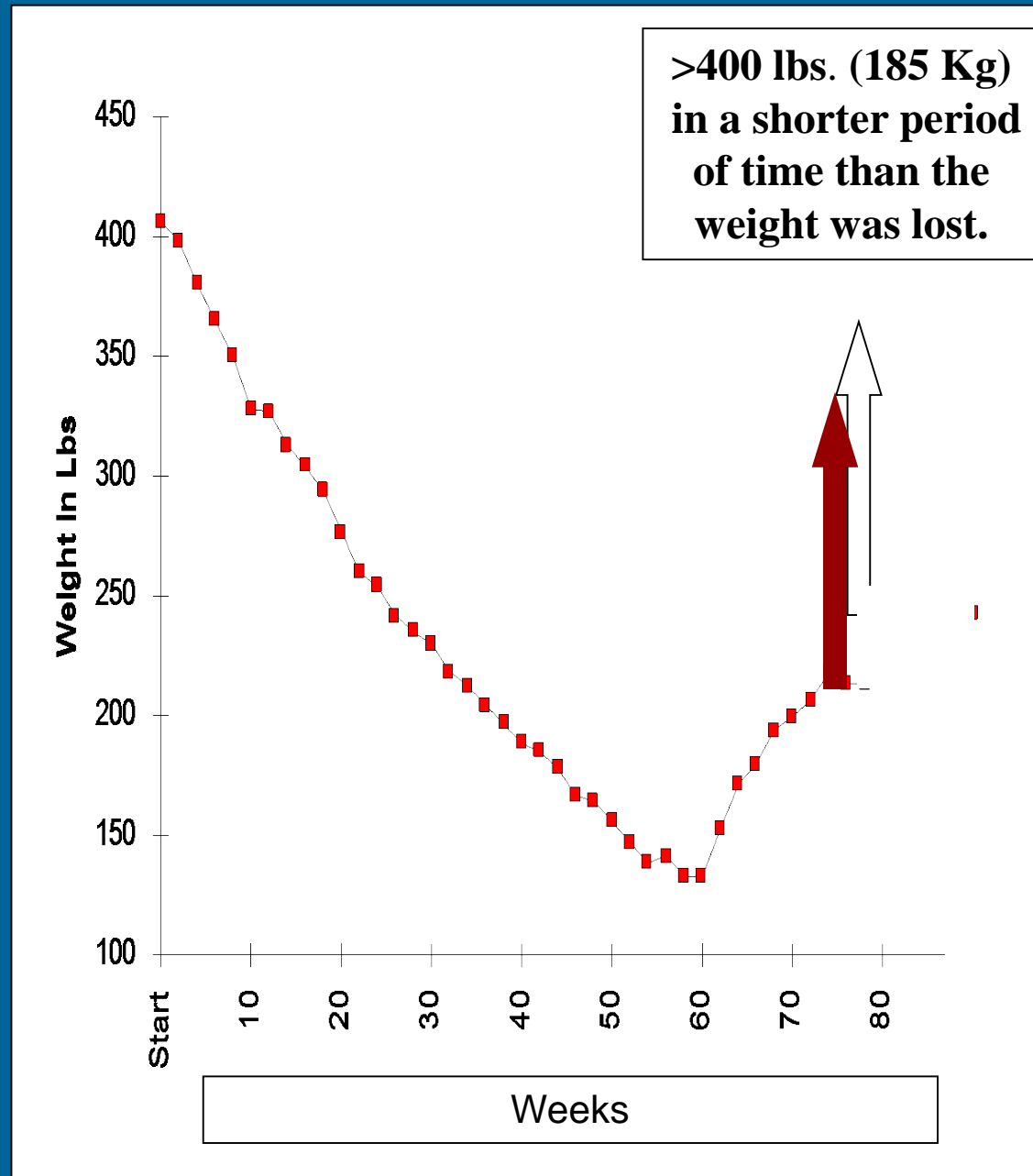
Age 28

In 51 weeks:
408 ➡ 132 lbs.



Age 29

Which photo depicts 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

Hospital Discharges

Doctor Office Visits

Emergency Room Visits

Pharmacy Costs



Categories 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 <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

Psychoactive *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:

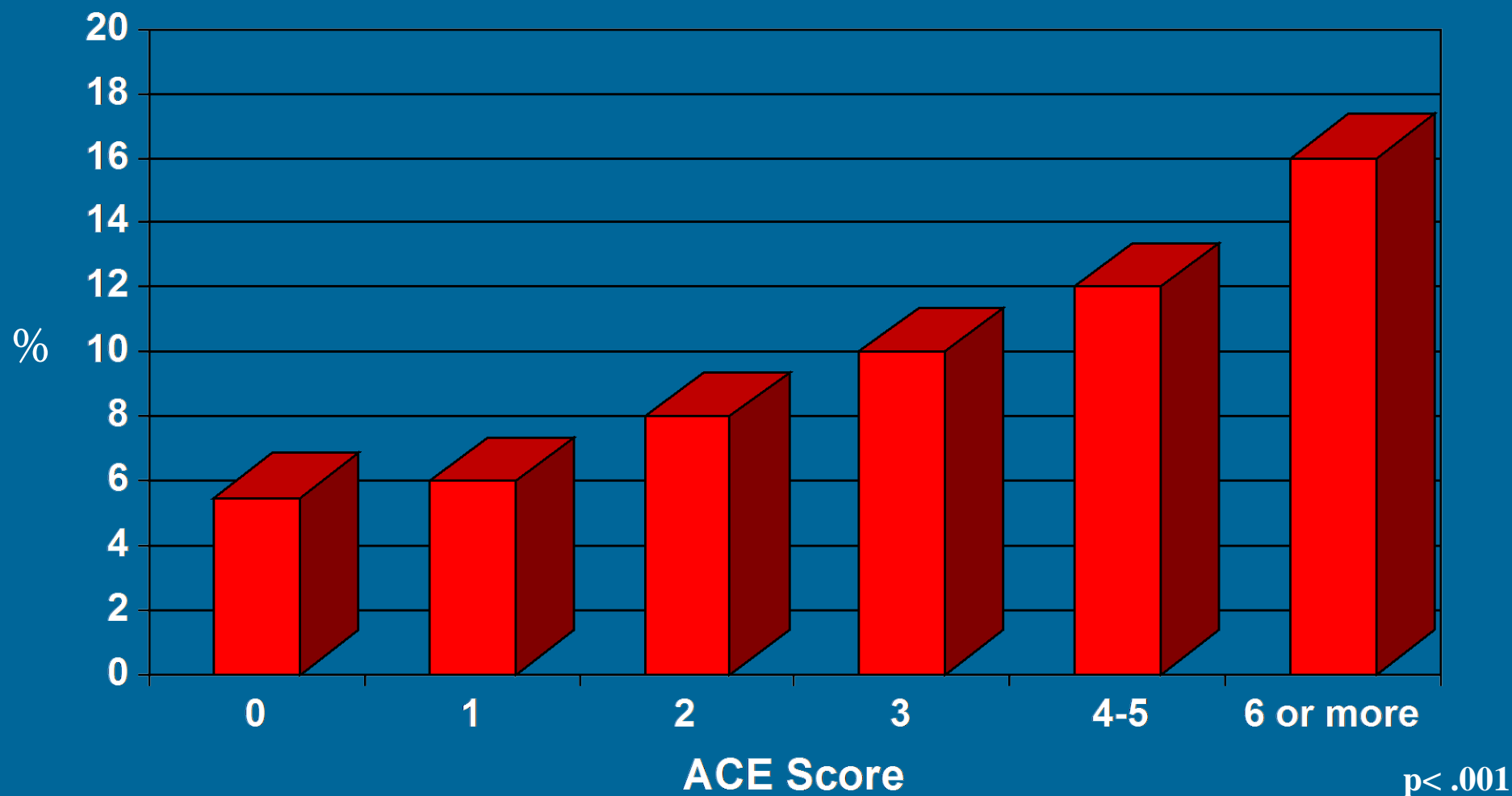
“Addiction is due to the characteristics intrinsic in the molecular structure of some substance.”



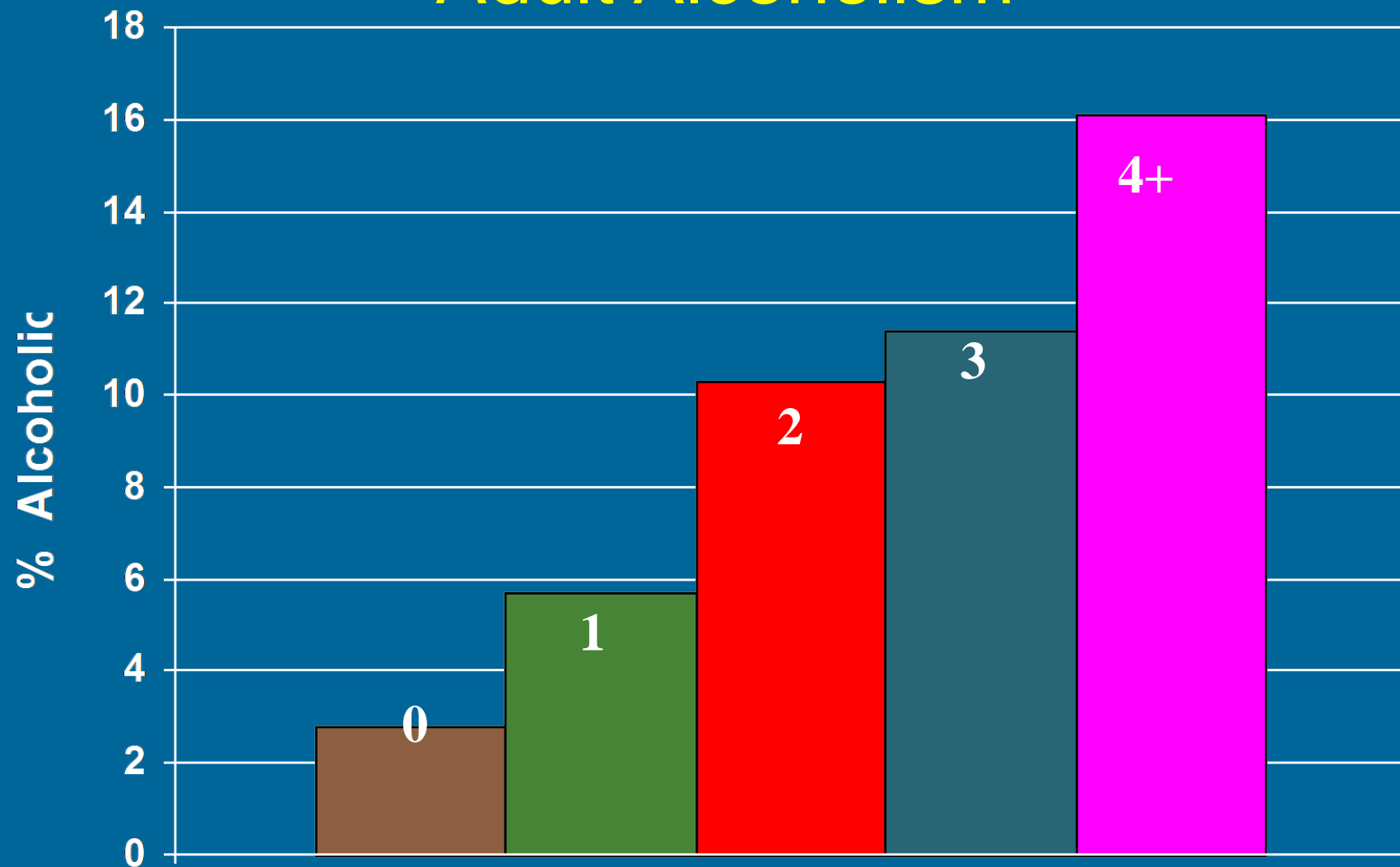
In the ACE Study, we found that:

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

Adverse Childhood Experiences vs. Smoking as an Adult

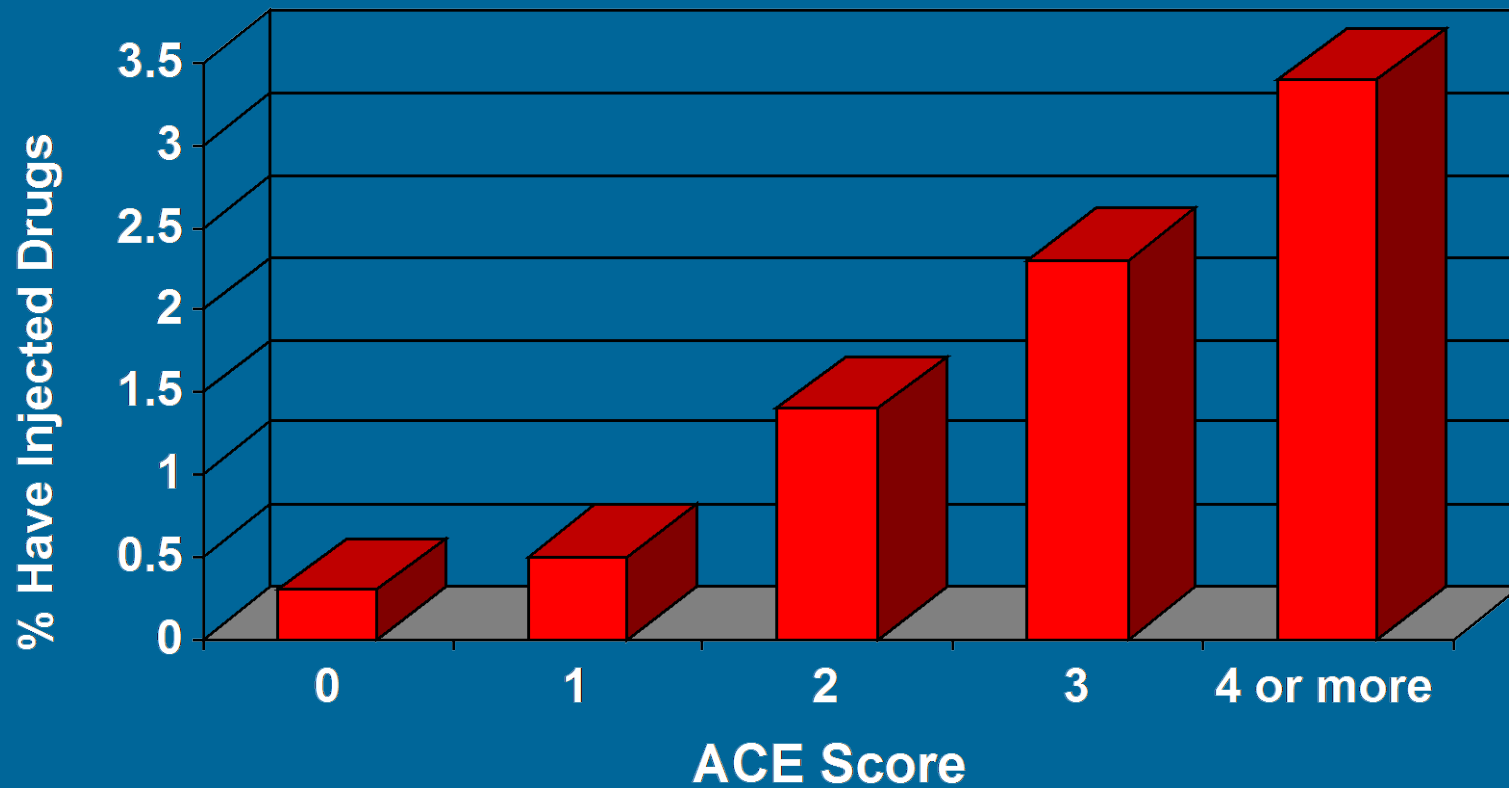


Childhood Experiences vs. Adult Alcoholism





ACE Score vs Intravenous Drug Use



$p < 0.001$

An ad from the 1940s, for the Profession

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

One Pint (473 cc.) No. 348

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

Contains Alcohol & Potassium
Contraindications: ...
Warnings: ...
Contraindications: ...
Precautions: ...
CAUTION—To be used only in cases where the physician is satisfied that the benefits outweigh the risks.
Eli Lilly and Company
INDIANAPOLIS, U.S.A.

WITH TABLETS

Lilly

**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.

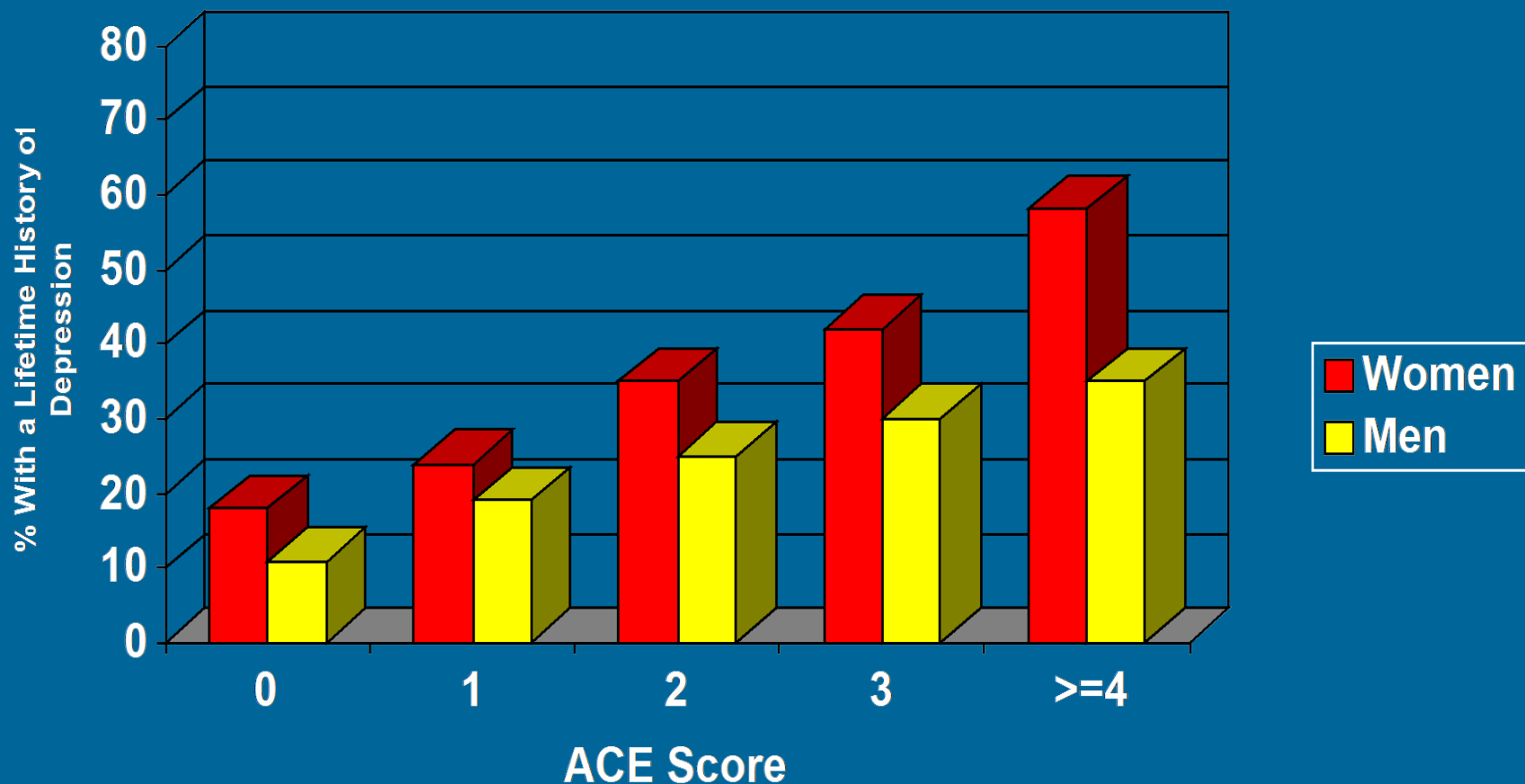
Some say it is due to a neurochemical imbalance.



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

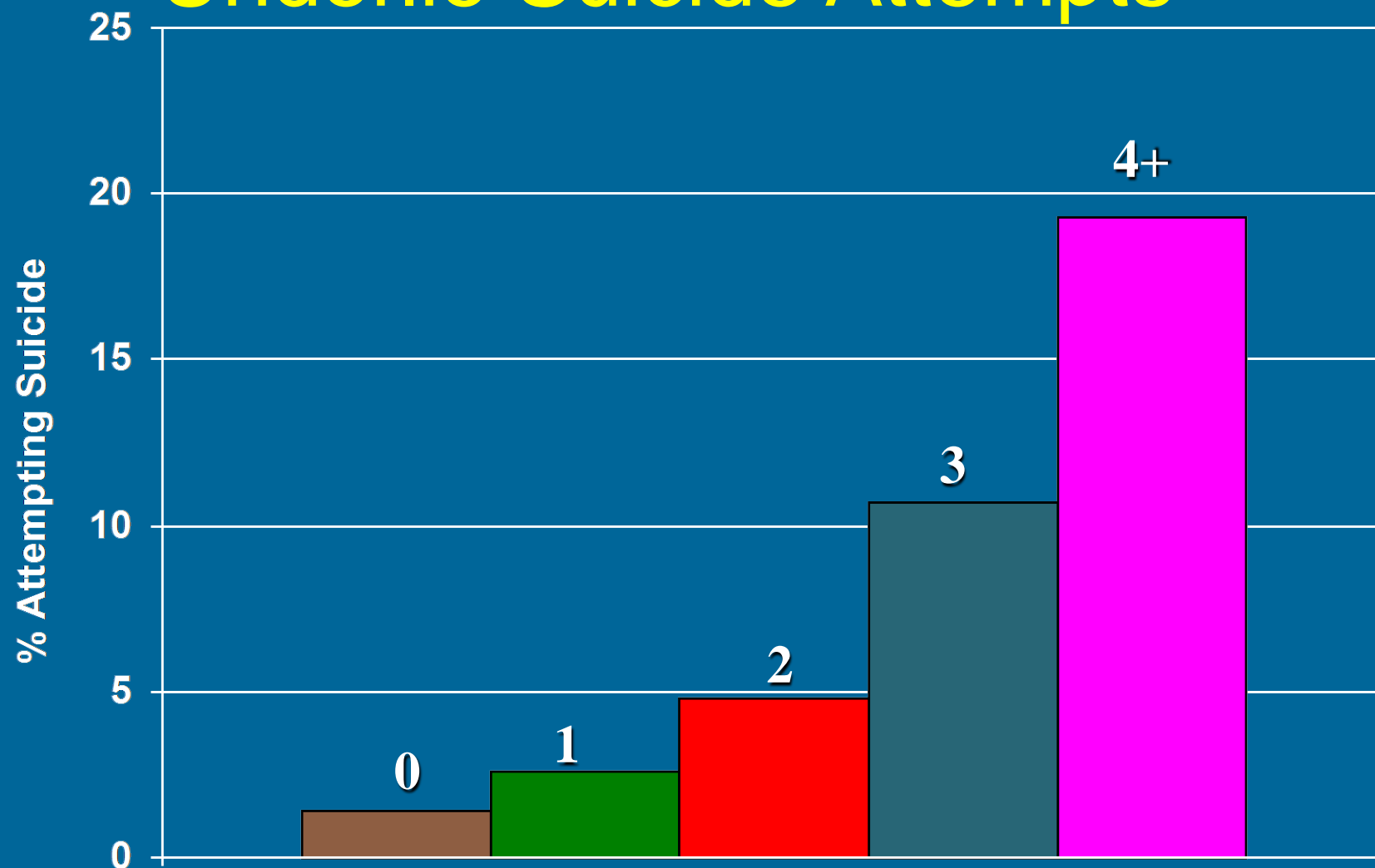


Childhood Experiences Underlie Chronic Depression

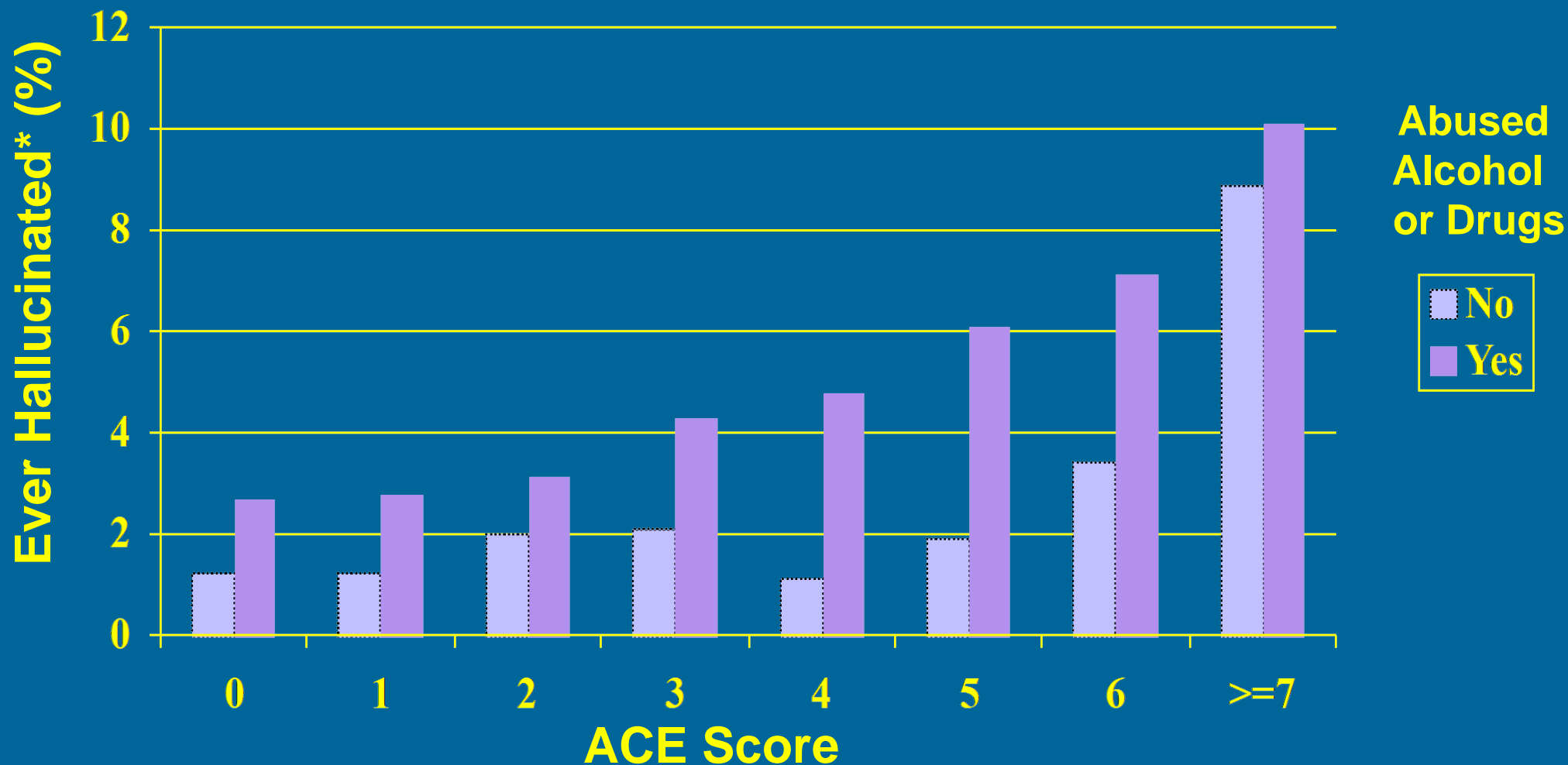




Childhood Experiences Underlie Suicide Attempts

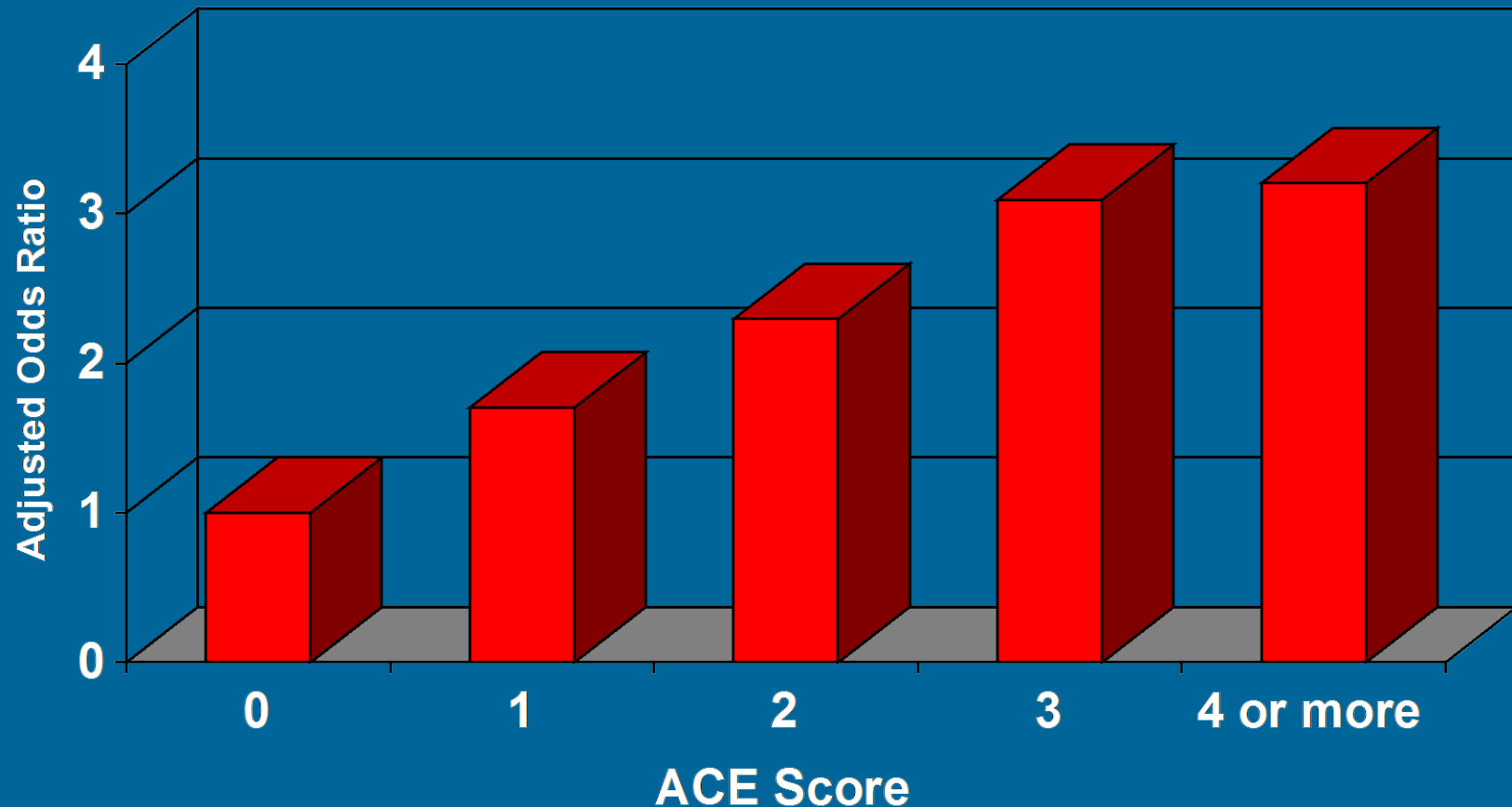


ACE Score and Hallucinations



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

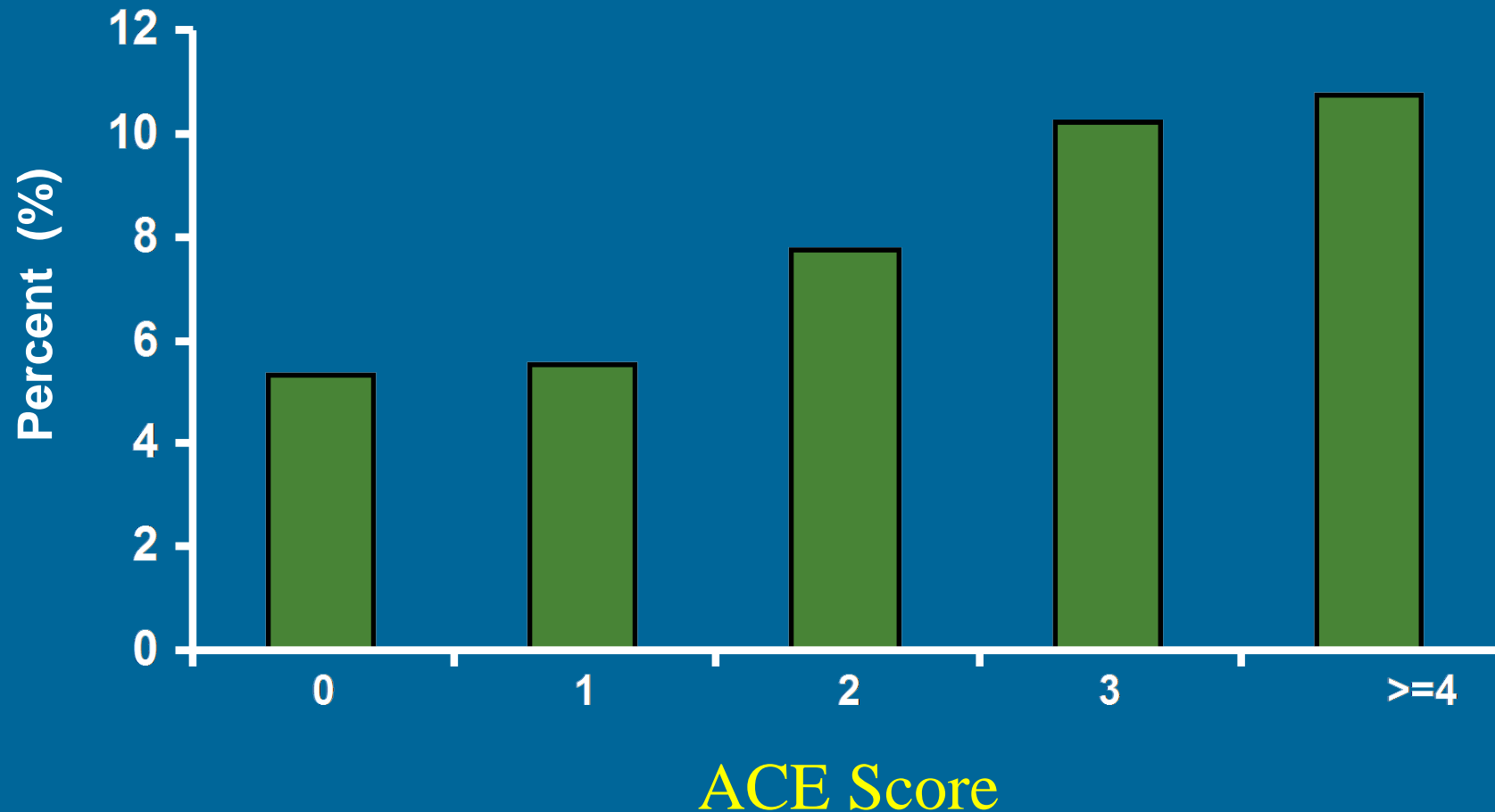
Adverse Childhood Experiences vs. Likelihood of > 50 Sexual Partners





Biomedical Disease

ACE Score and Later 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



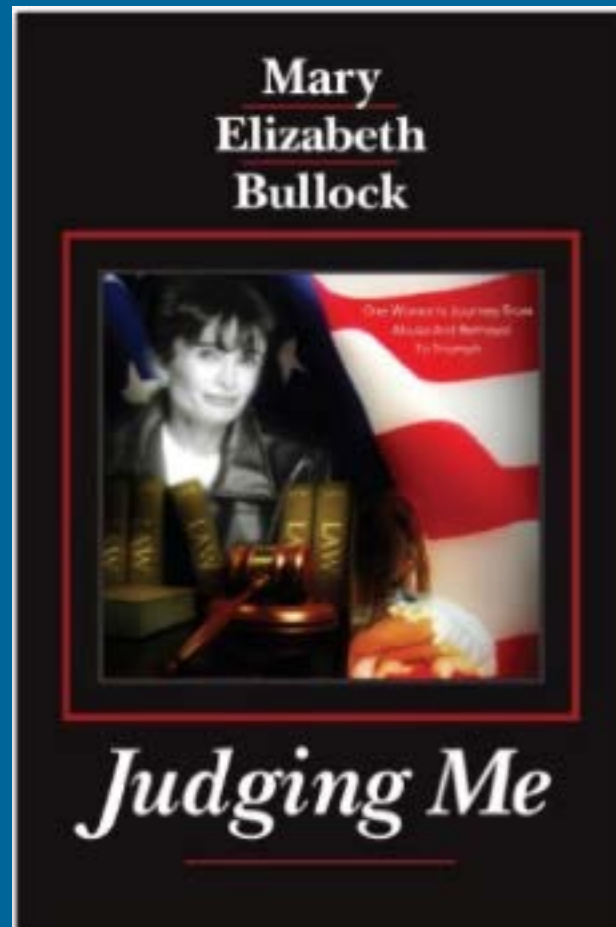
*After correction for age, race, education, and conventional risk factors like smoking and diabetes.

Circulation, Sept. 2004

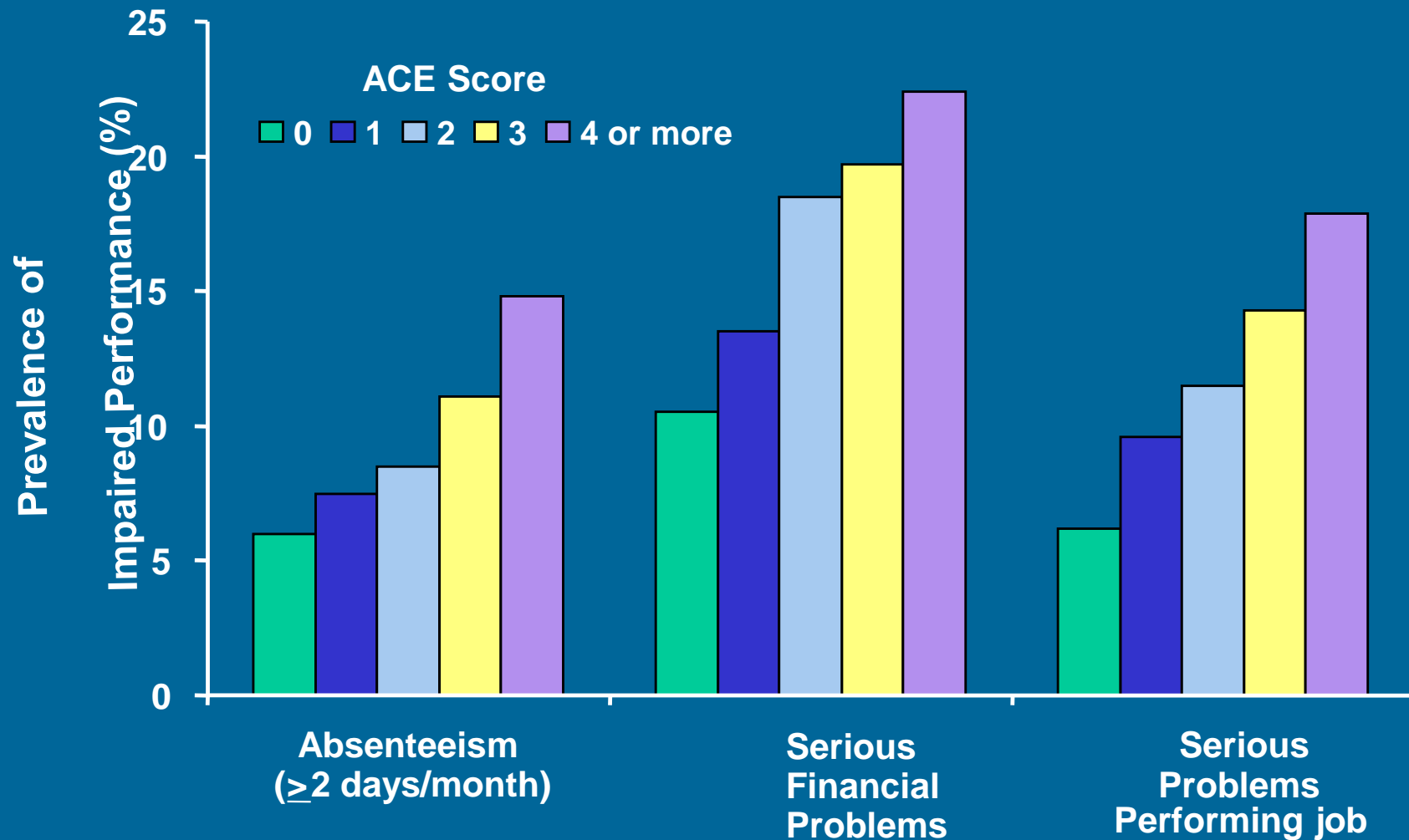


Biomedical Disease

Resilience?




ACE Score and Indicators of Impaired Worker Performance





Pathways from ACEs to Disease

- 1) By various Coping Mechanisms.
- 2) By complex CNS hyperstimulation.
- 3) By Epigenetic effects.



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.




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 disease, but by life experiences.



The risk factors underlying our
common adult chronic diseases
often are effective short-term
*cop*ing devices.



A Public Health Paradox

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

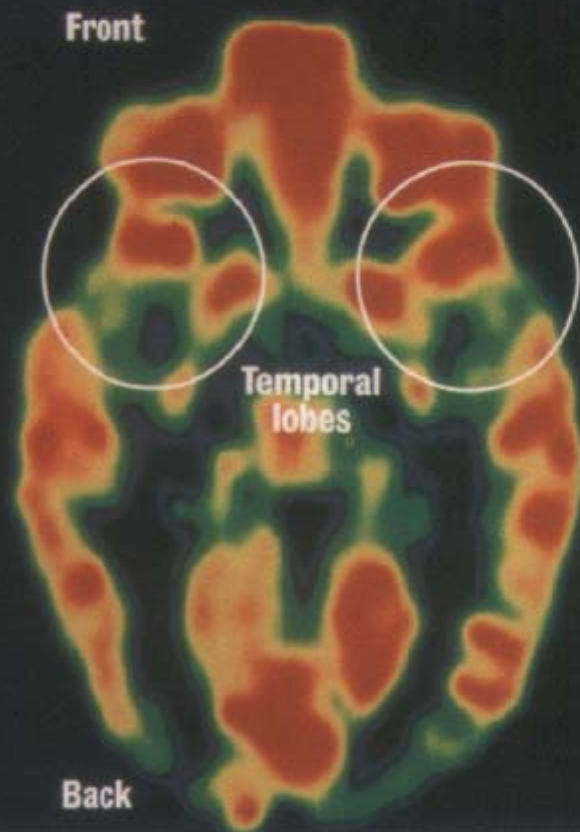


Evidence from the ACE Study Indicates:

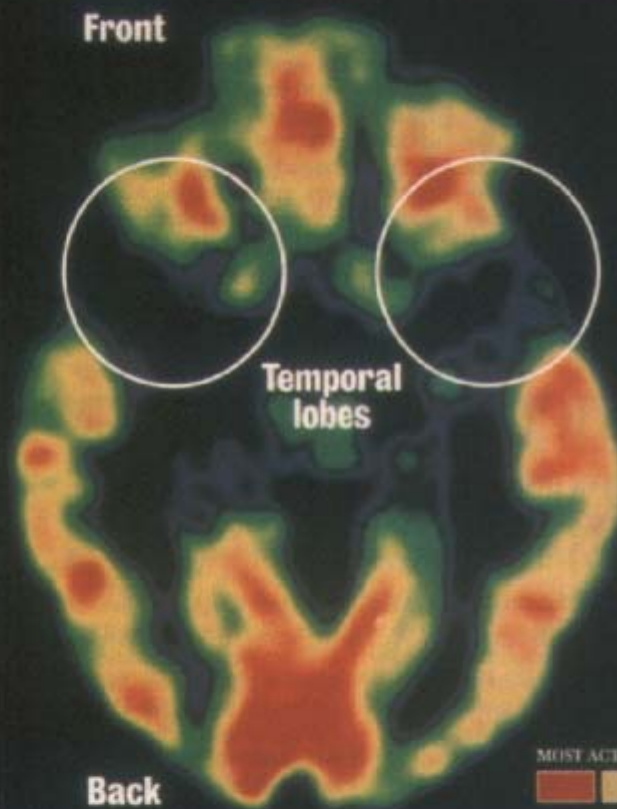
Adverse childhood experiences are the *main* cause of health risk behaviors, disease, disability, premature death, and healthcare costs.

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

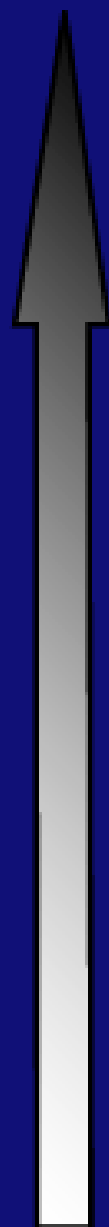
This PET scan of the brain of a Romanian orphan, who was institutionalized shortly after birth, shows the effect of extreme deprivation in infancy. The temporal lobes (top), which regulate emotions and receive input from the senses, are nearly quiescent. Such children suffer emotional and cognitive problems.

MOST ACTIVE LEAST ACTIVE

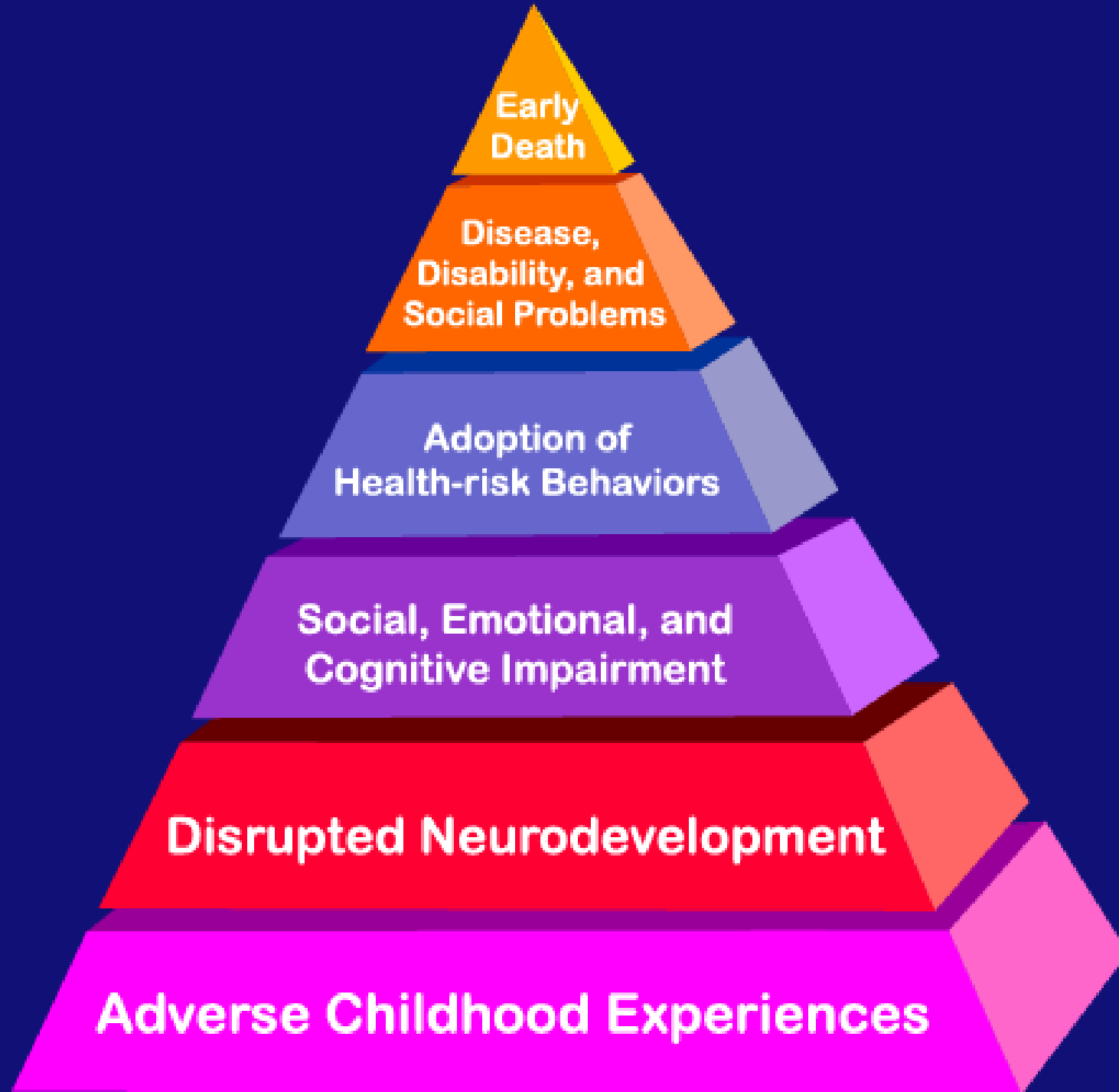
A color scale legend for PET scans. It consists of five colored squares arranged horizontally: red, orange, yellow, green, and blue. The red square is labeled 'MOST ACTIVE' and the blue square is labeled 'LEAST ACTIVE'.



Death



Conception





Improving the Future



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

**Acknowledgment that
these problems exist.**

**Recognition of cases
in medical practice.**

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

Translating Research into Practice

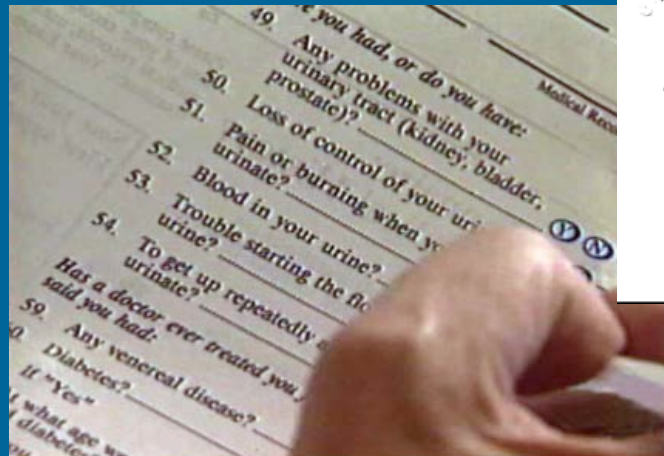
a beginning



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



Additional Medical Questions of Demonstrated 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**
(130,000 patient sample)

Final Insights from the ACE Study

- Adverse childhood experiences are *common* but typically 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 the solution may be threatening and cause flight.
- 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 trauma-oriented approach to medical evaluation has been demonstrated to be feasible, affordable, and acceptable.
- It is possible to move from our current symptom-reactive mode of practice, to start dealing with basic causes, and also significantly improve care while reducing its cost.
- A 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.ACEsConnection.com

www.AVAHealth.org (Major current DVD on ACE Study)

info@CavalcadeProductions.com (Documentary ACE DVDs)

www.HumaneExposures.com (3 Insightful Books)

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

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