

Adverse Childhood Experiences and their Relationship to Adult Well-being and Disease : *Turning gold into lead*



A collaborative effort between
Kaiser Permanente and the Centers for Disease Control

Office on Women's Health, US Dept. of HHS
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Origins of the ACE Study

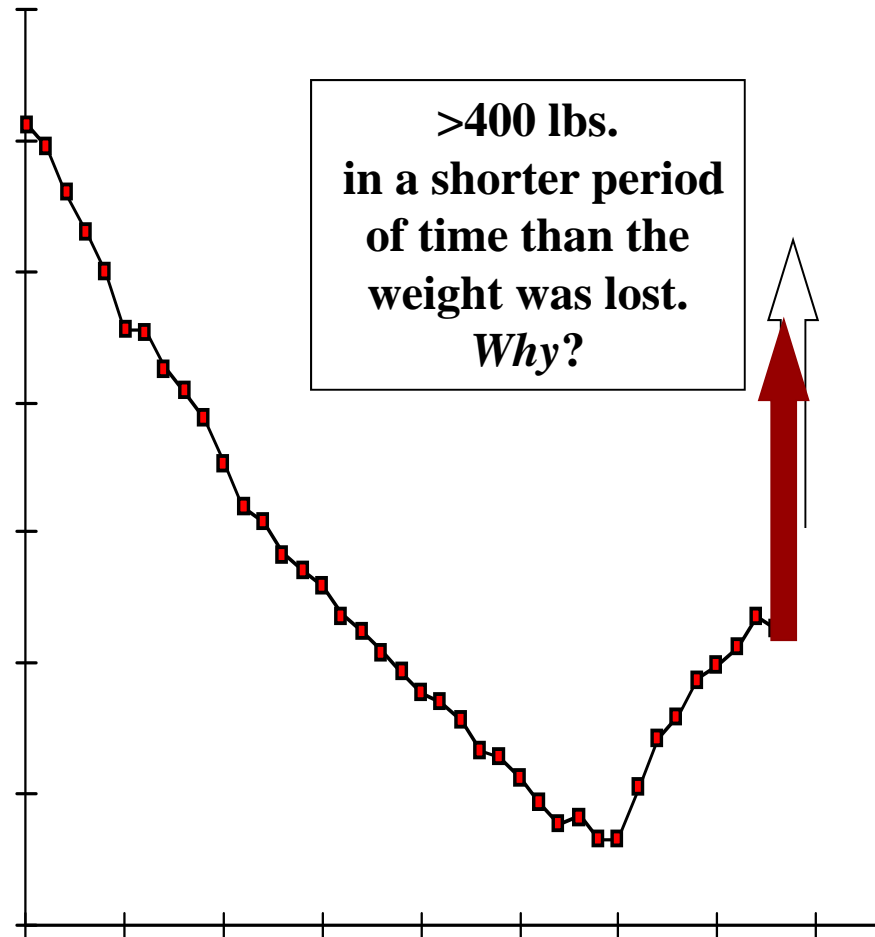


51 weeks later

408 → 132 lbs



What is the *core* problem here?



**>400 lbs.
in a shorter period
of time than the
weight was lost.
*Why?***

Weeks

ACE Study Design

Survey Wave 1

71% response (9,508/13,454)

n=13,000

*All medical evaluations
abstracted*

Survey Wave II

n=13,000

*All medical evaluations
abstracted*

vs.

*Present
Health Status*

N = 17,337

Mortality

National Death Index

Morbidity

Hospitalization

Doctor Office Visits

Emergency Room Visits

Pharmacy Utilization

Prevalence of Adverse Childhood Experiences

	Prevalence (%)
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...

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



- Two out of three 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.
- * Women are 50% more likely than men to have a Score >5.

Òn my beginning is my end. Ó

T.S.Eliot, *Quartets*

Depression:

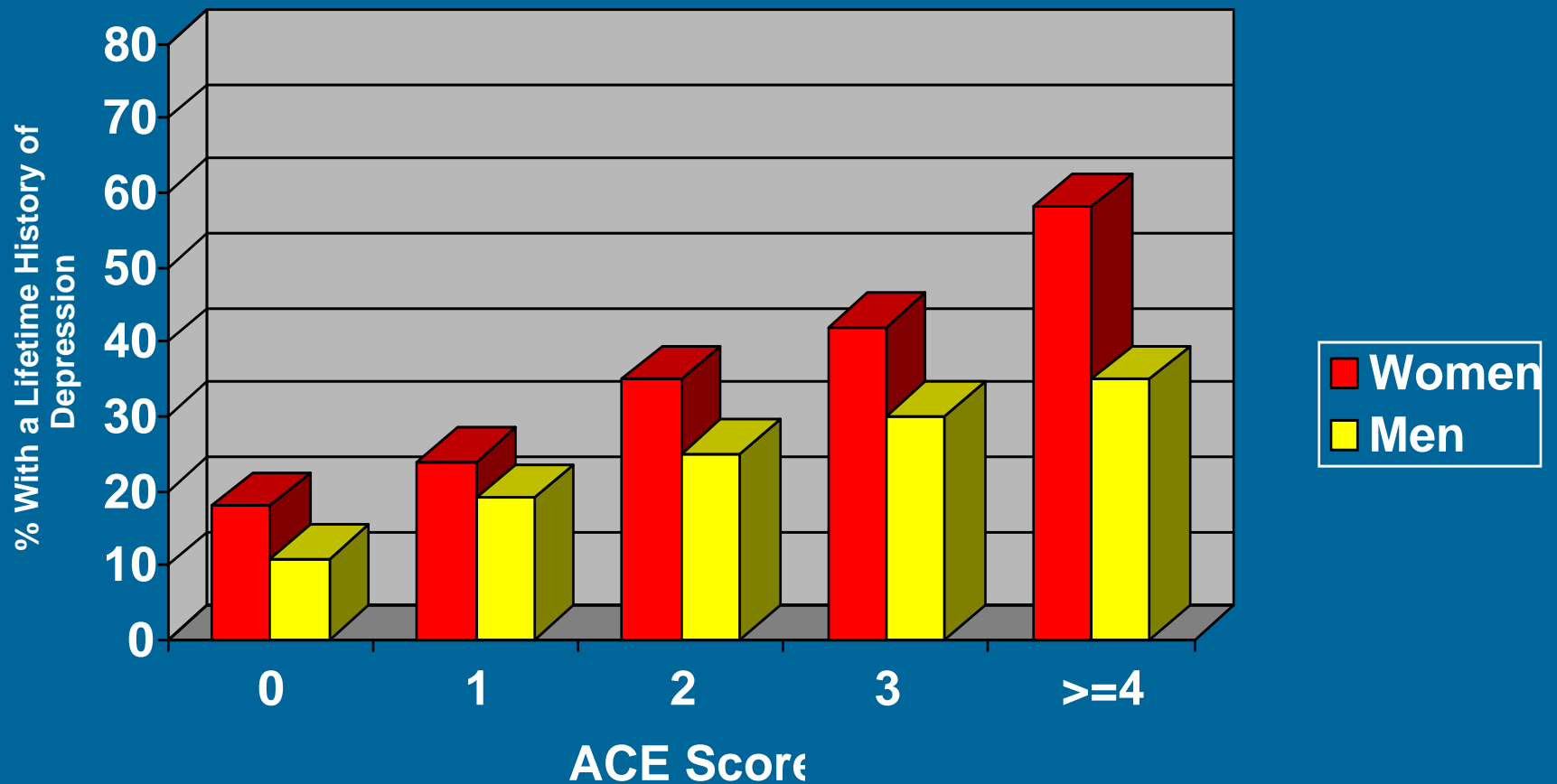
Most say depression is a disease.

Many say depression is genetic.

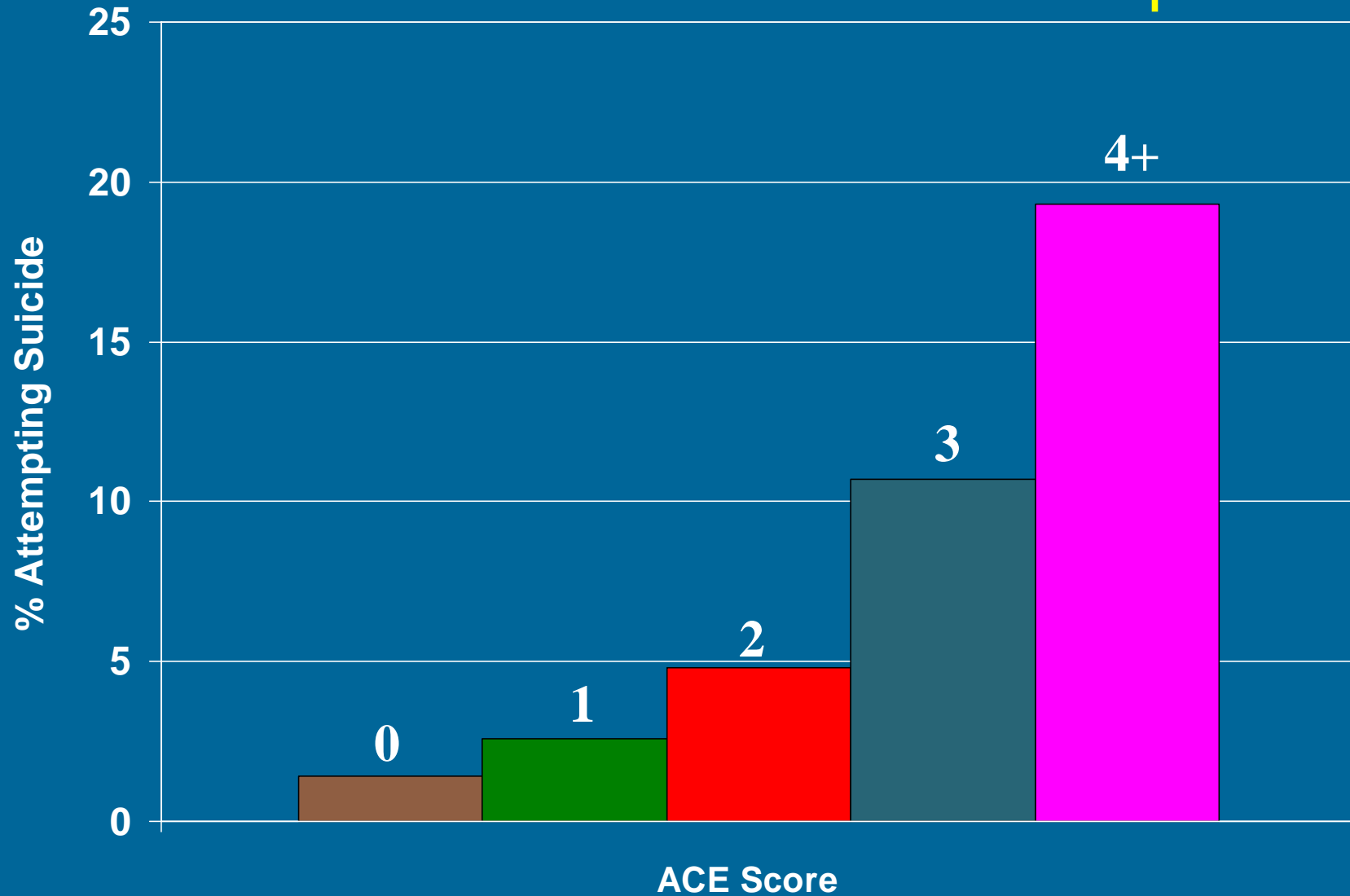
Some say it is due to a chemical imbalance.



Childhood Experiences Underlie Chronic Depression

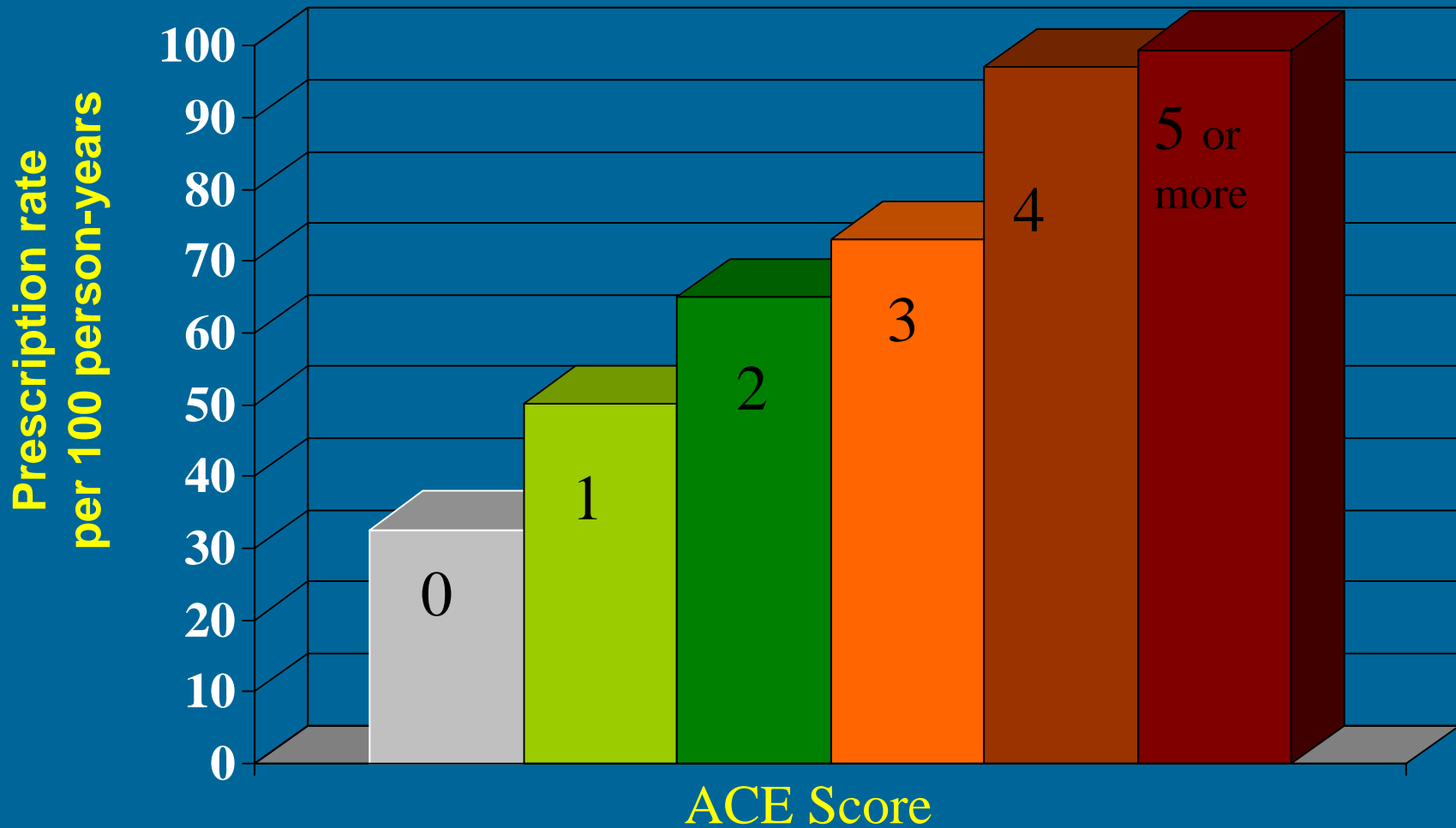


Childhood Experiences Underlie Suicide Attempts

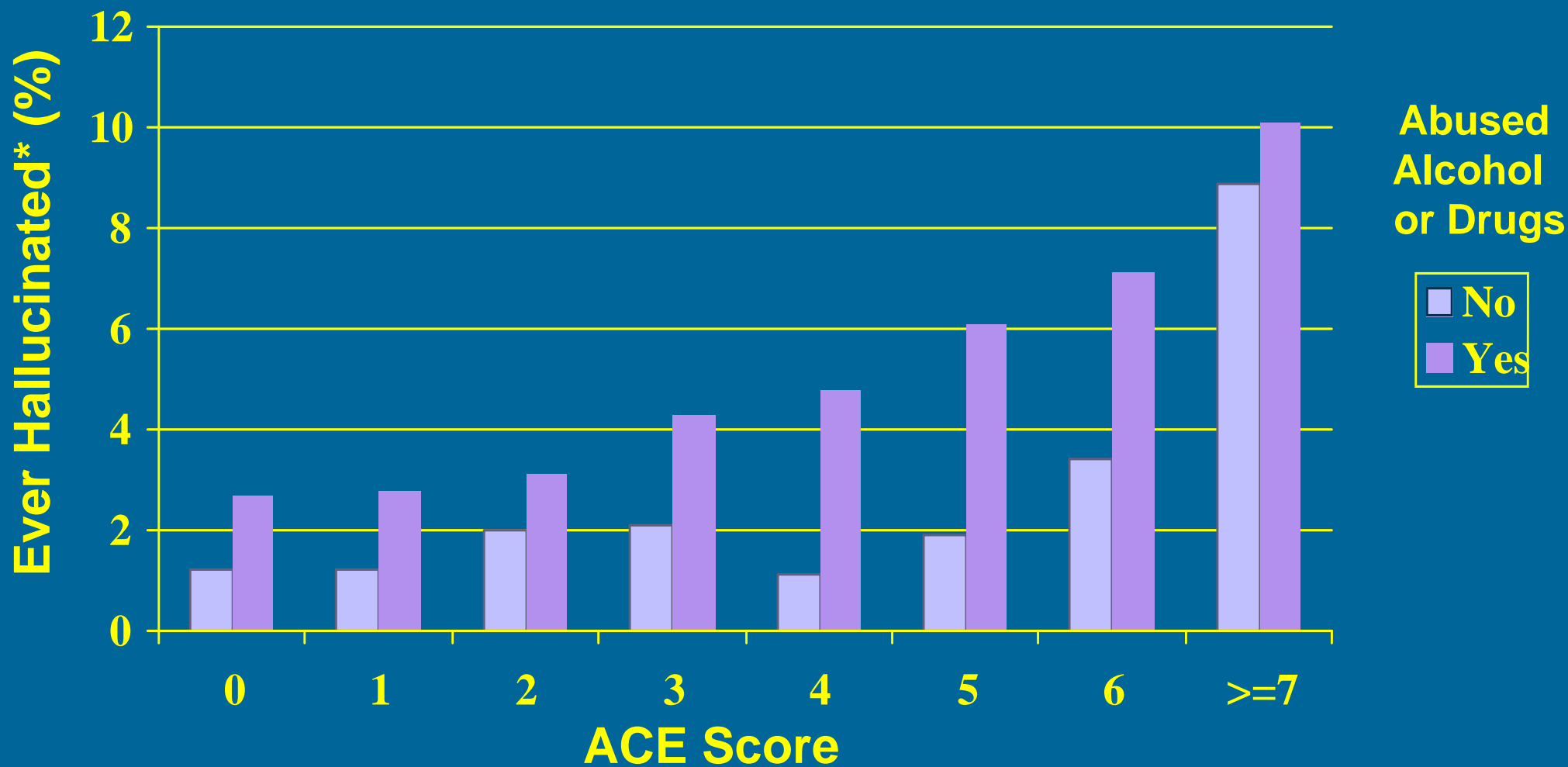


ACE Score and Rates of Antidepressant Prescriptions

approximately 50 years later



ACE Score and Hallucinations



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

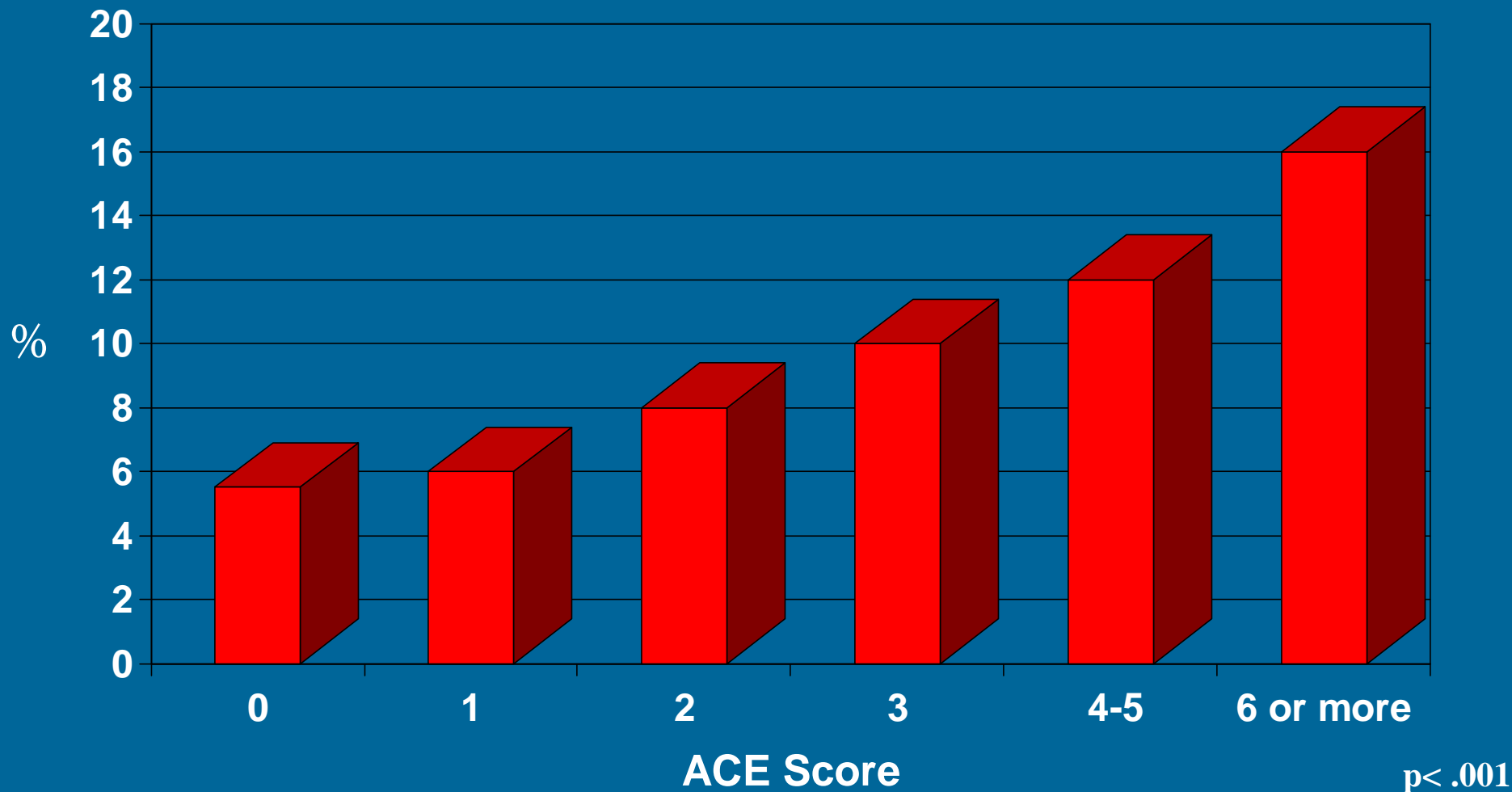
The traditional concept:

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

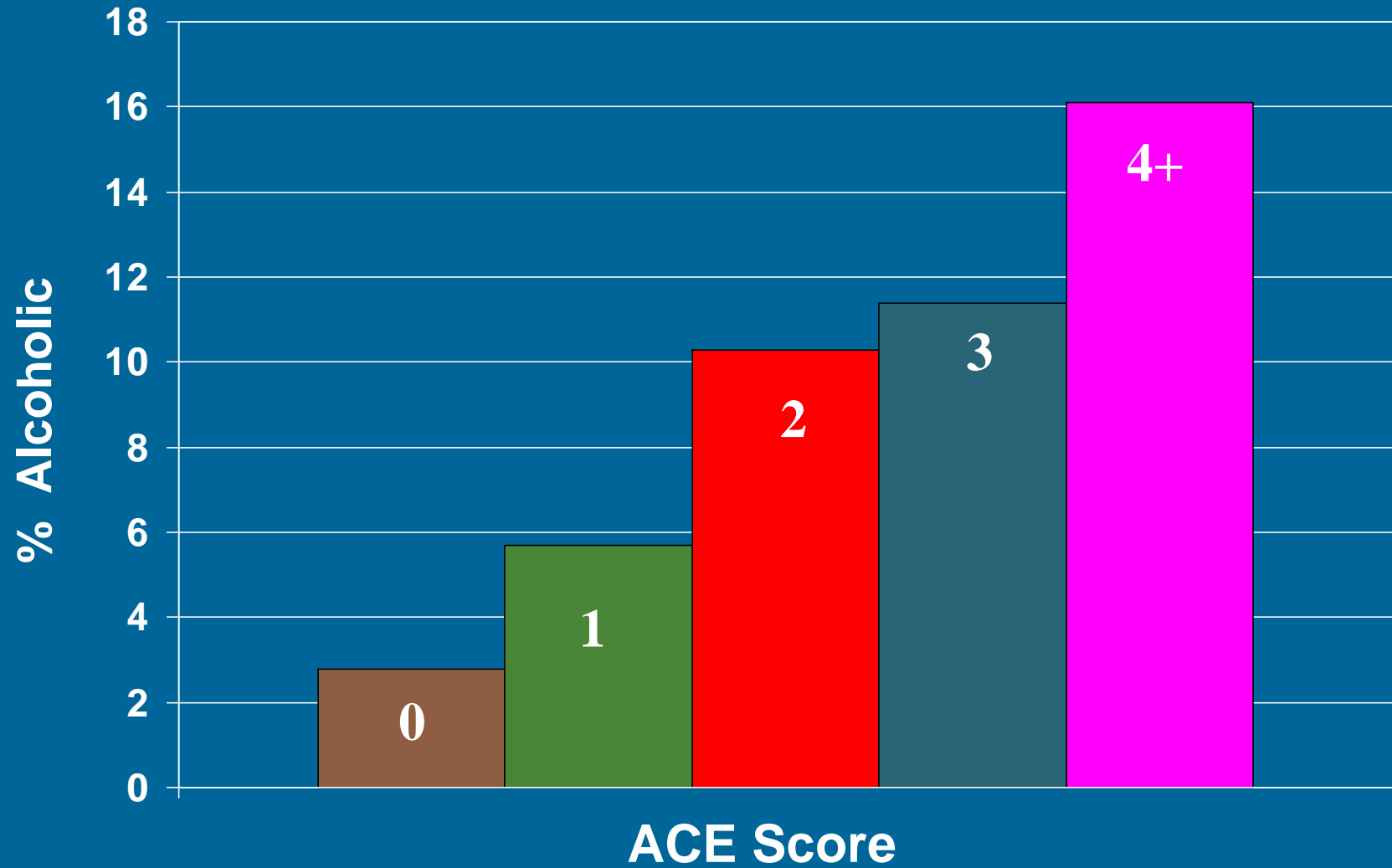
The ACE Study shows that:

Addiction highly correlates with characteristics intrinsic to that individual's childhood experiences.

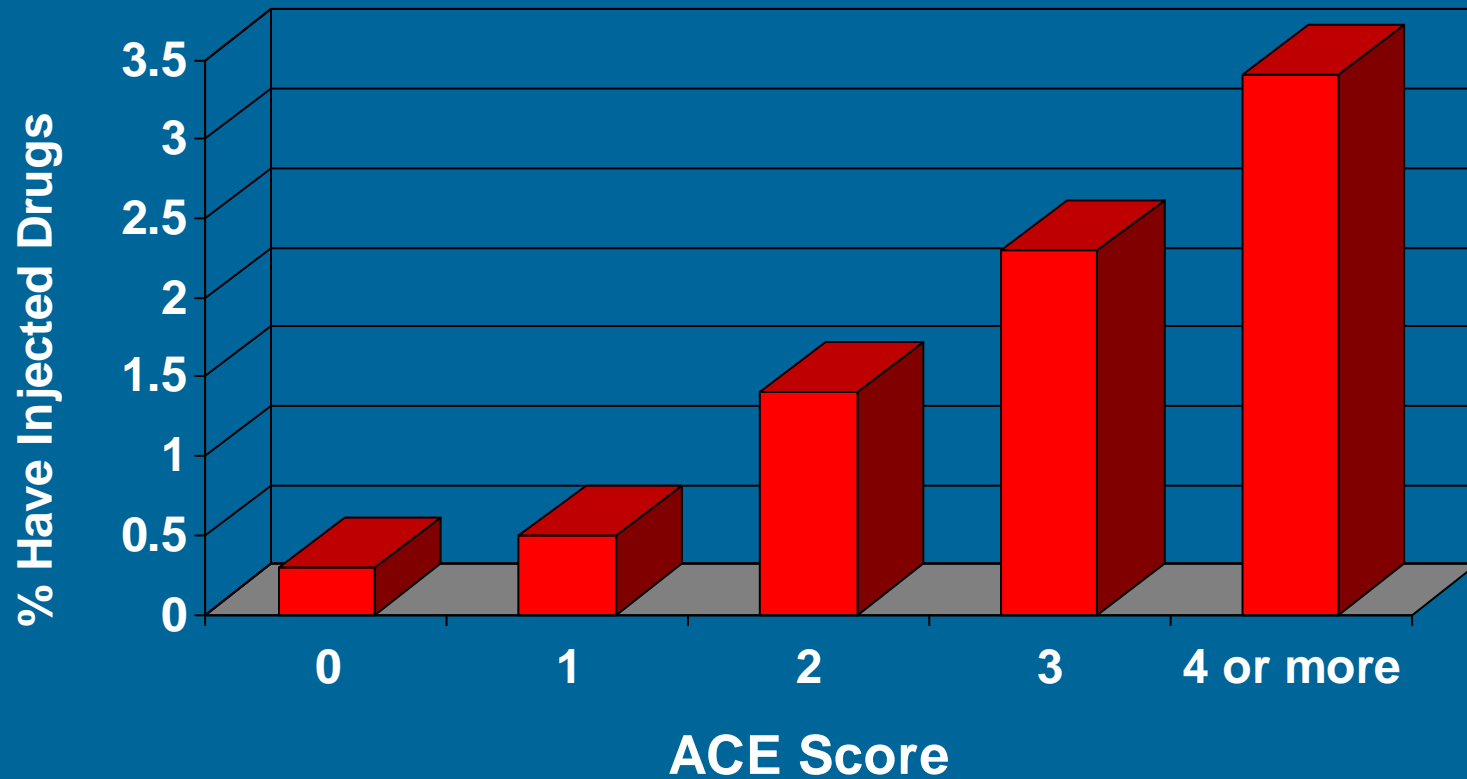
Adverse Childhood Experiences vs. Smoking as an Adult



Childhood Experiences vs. Adult Alcoholism

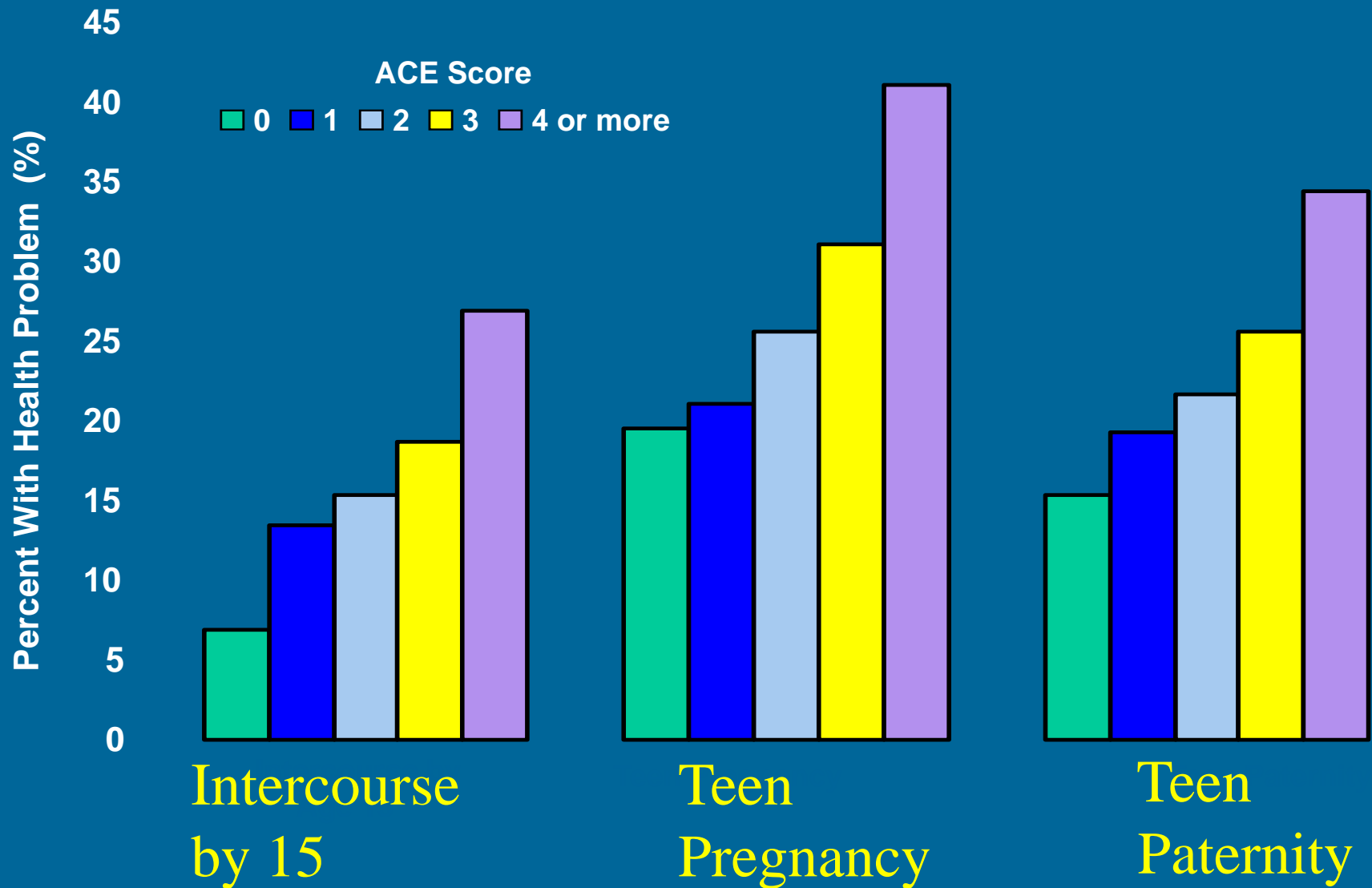


ACE Score vs Injection Drug Use

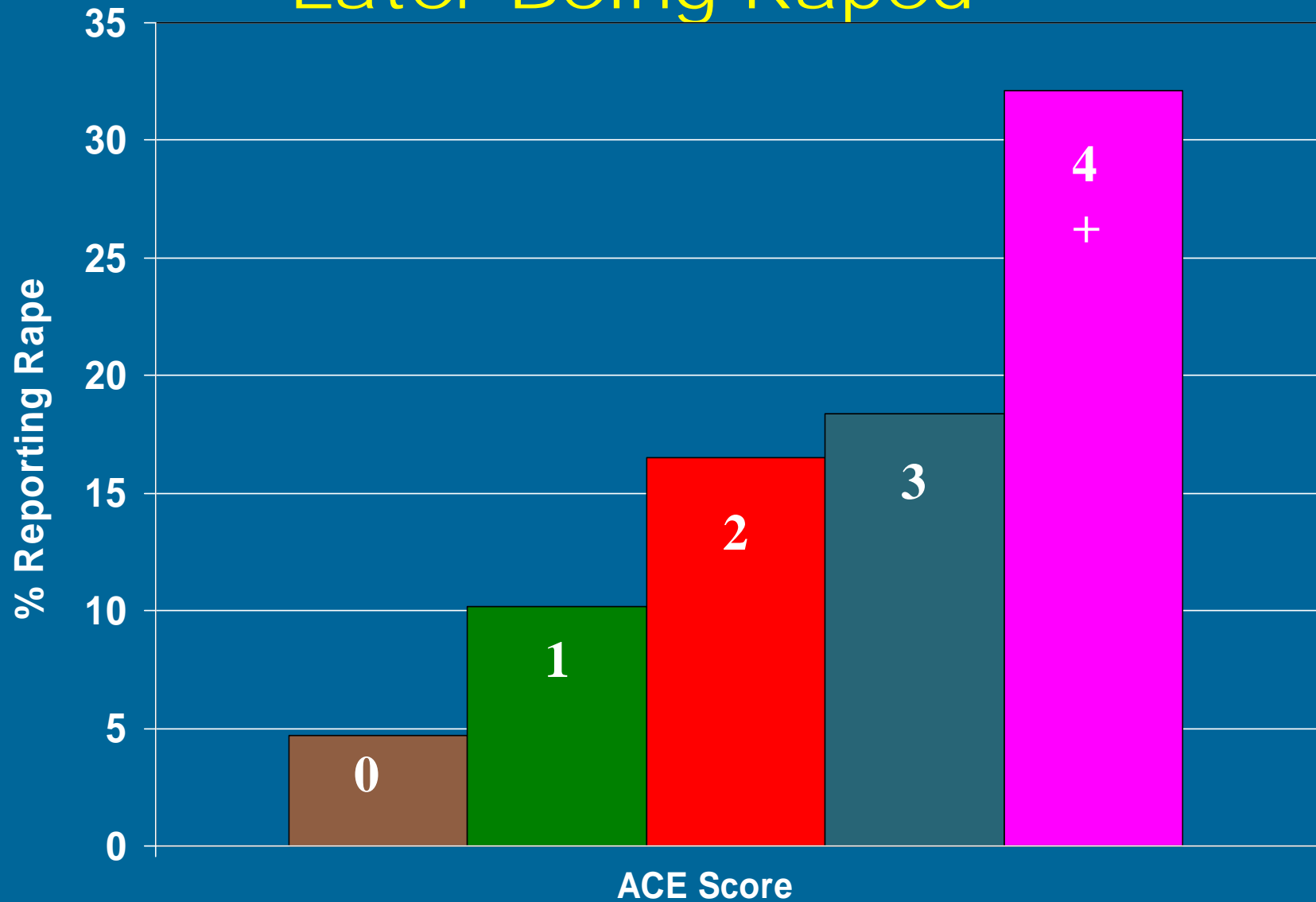


$p < 0.001$

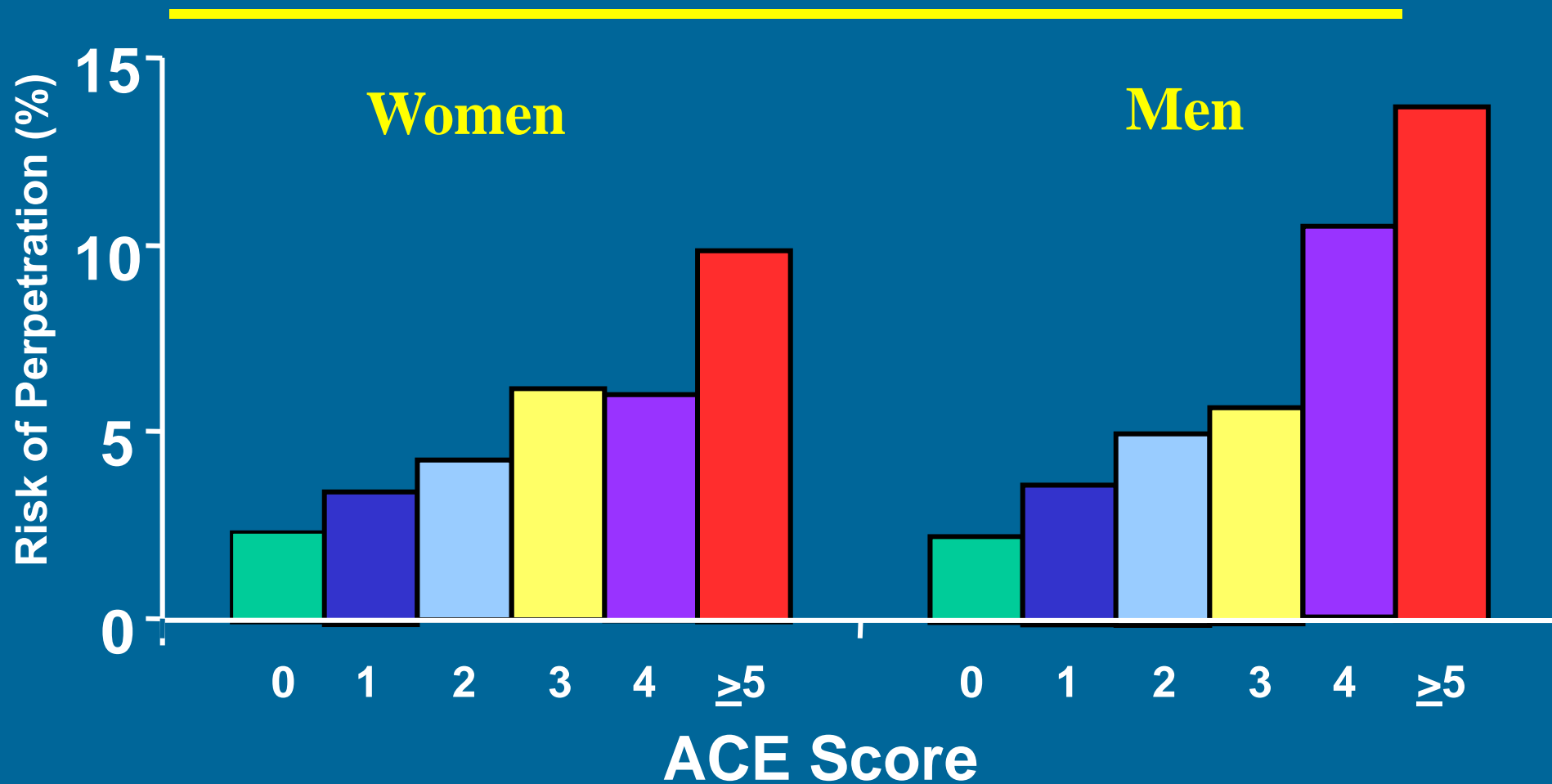
ACE Score and Teen Sexual Behaviors



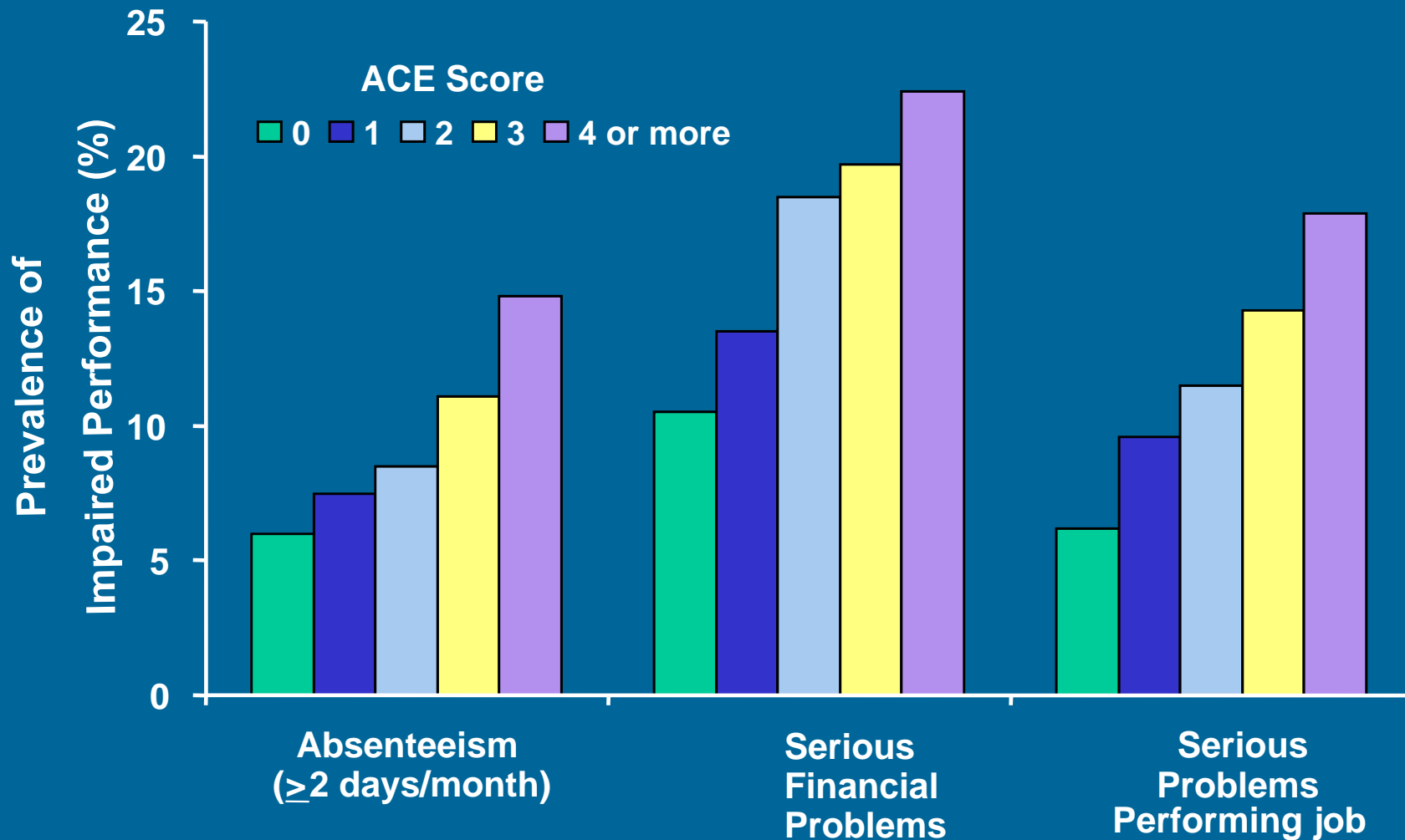
Childhood Experiences Underlie Later Being Raped



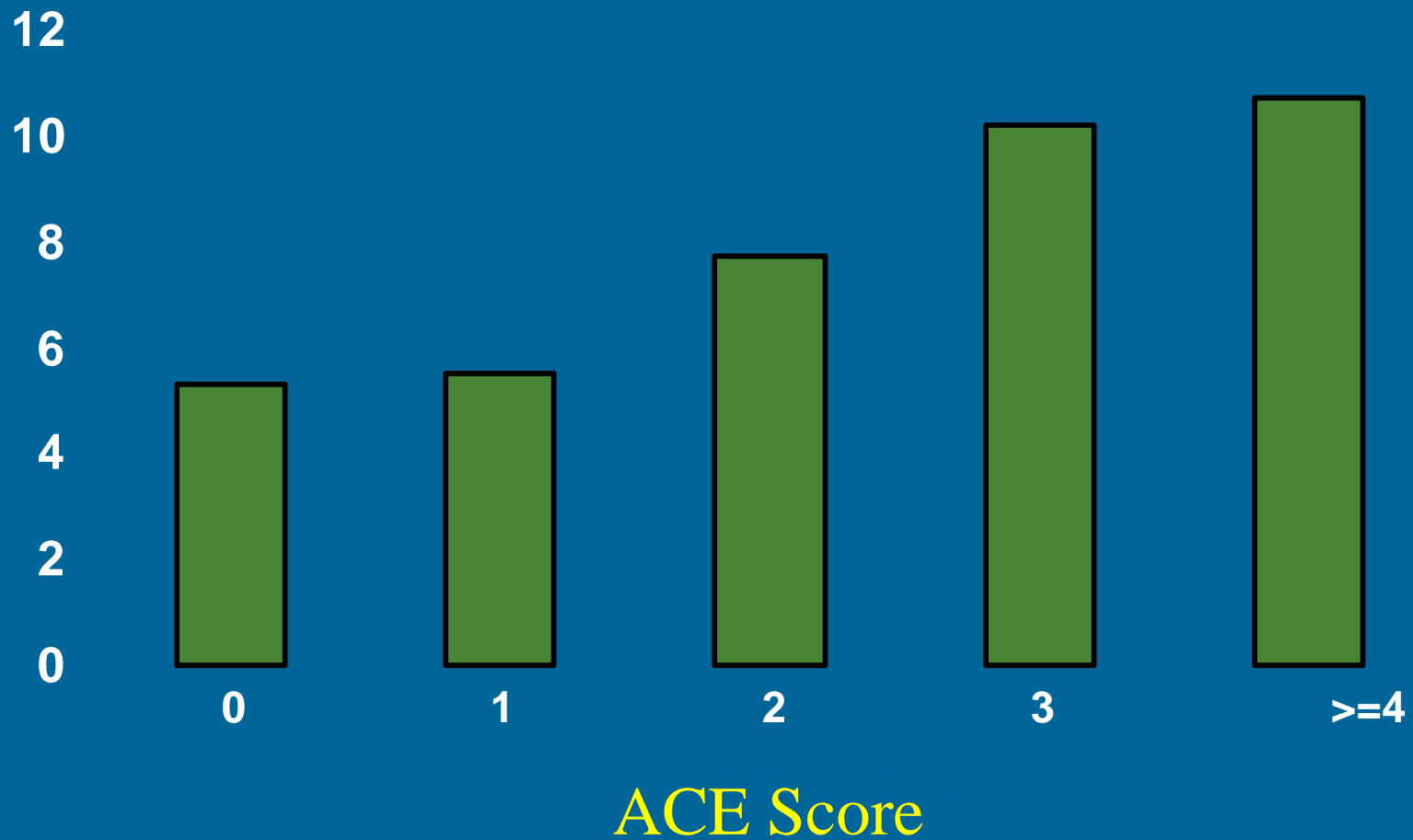
ACE Score and the Risk of *Perpetrating* Domestic Violence



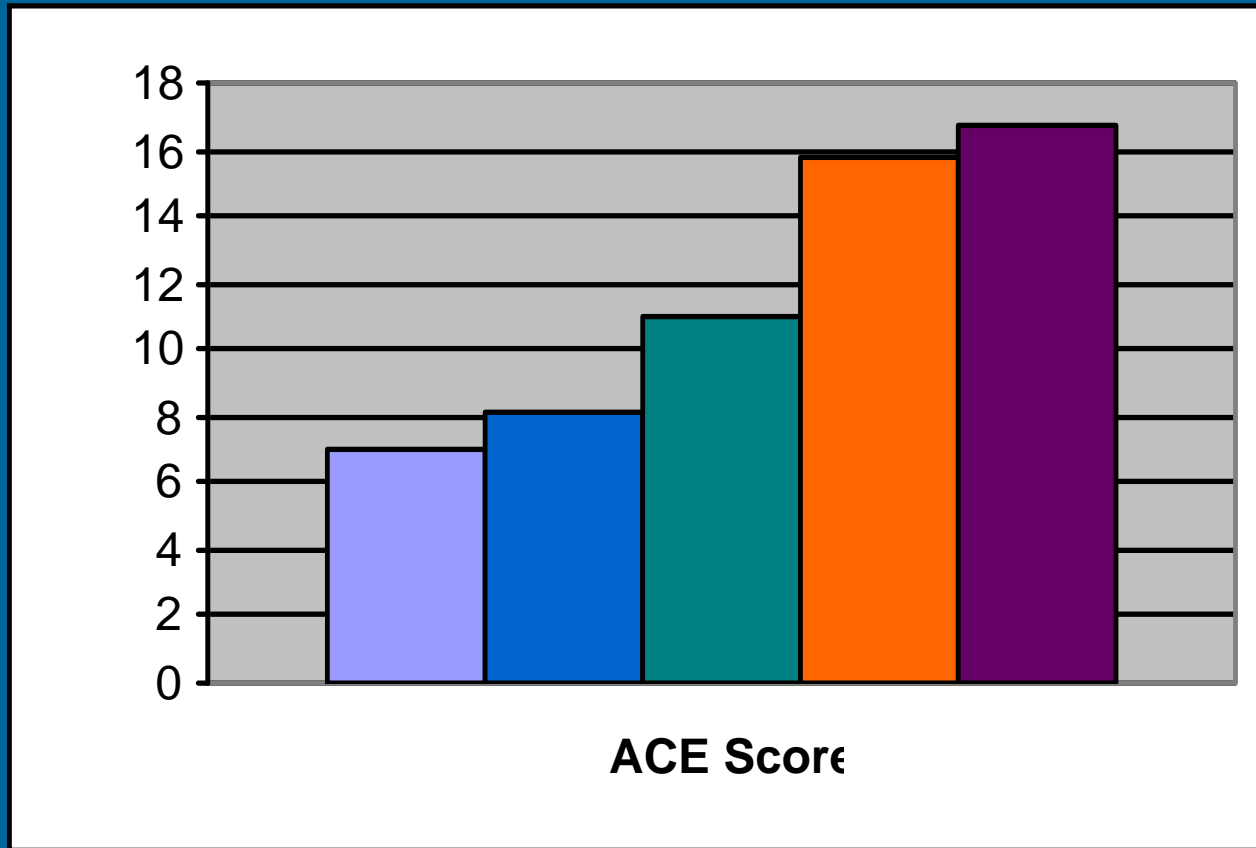
ACE Score and Indicators of Impaired Worker Performance



The ACE Score and the Prevalence of Liver Disease (Hepatitis/Jaundice)



ACE Score vs. COPD



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



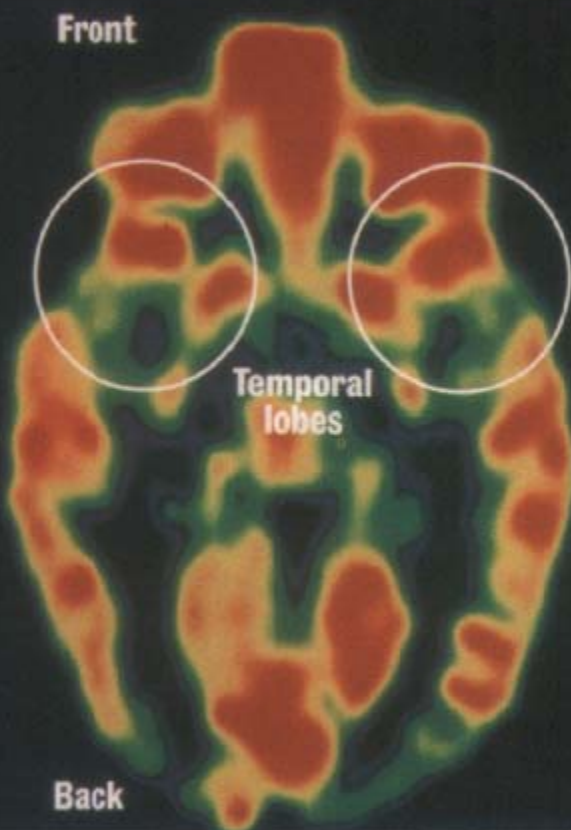
*After correction for age, race, education, and conventional risk factors like smoking and diabetes. *Circulation*, Sept 2004.

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

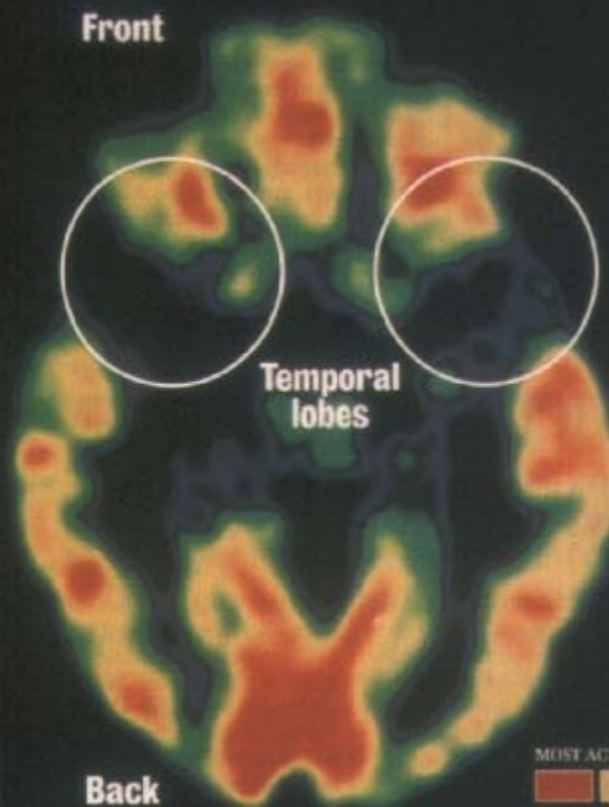
Why is treatment so difficult?

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 wire the circuits.

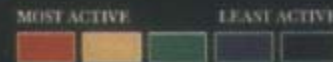


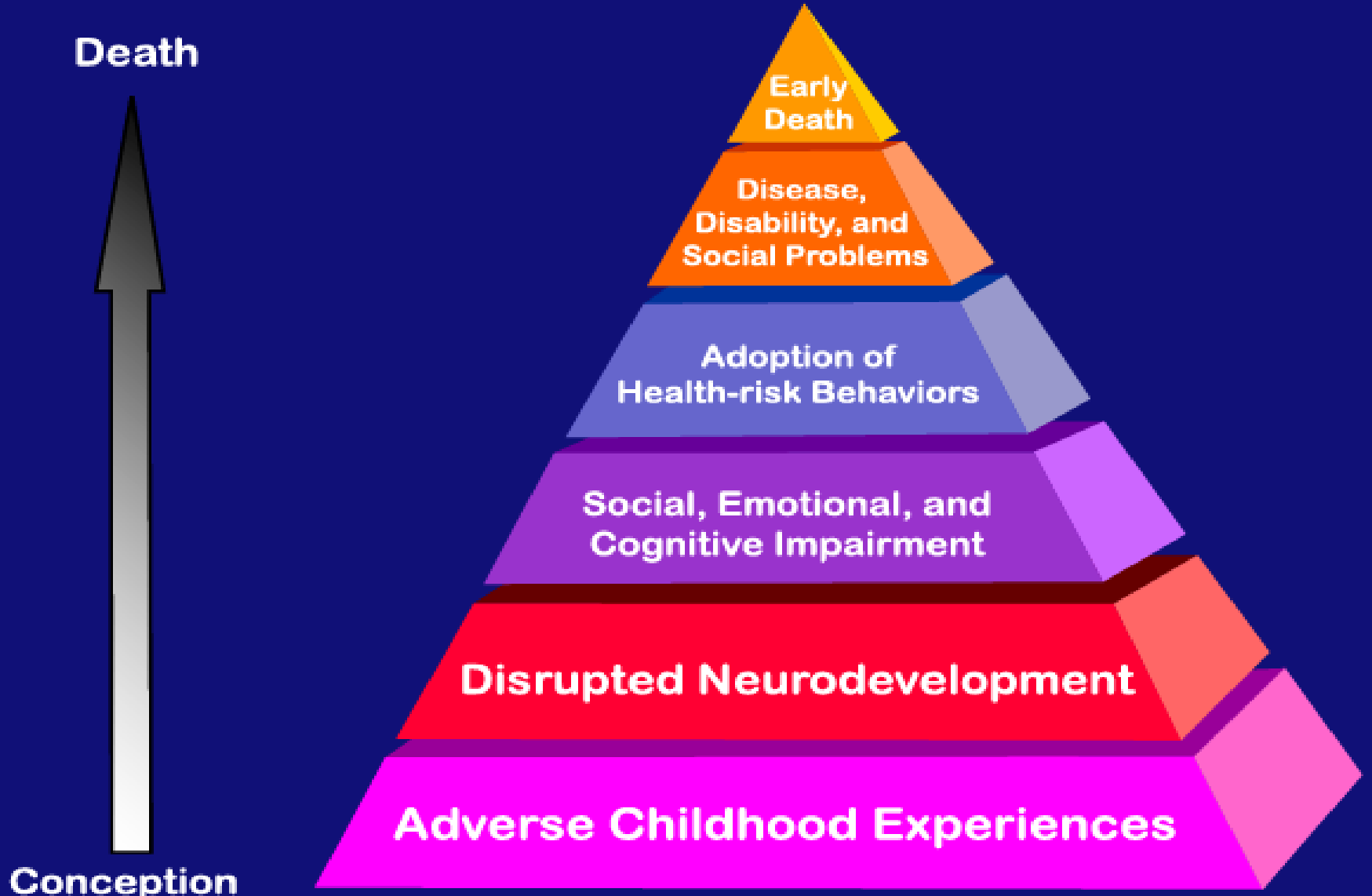
Front



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.





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

In Summary, the ACE Study indicates:

Adverse childhood experiences are the most *basic and long-lasting* determinants of health risk behaviors, mental illness, social malfunction, disease, disability, death, and healthcare costs.

A Public Health Paradox

What are conventionally viewed as Public Health *problems* are often personal *solutions* to long-concealed adverse childhood experiences.

“It’s hard to give up something that almost works.”

Translating Research into Practice

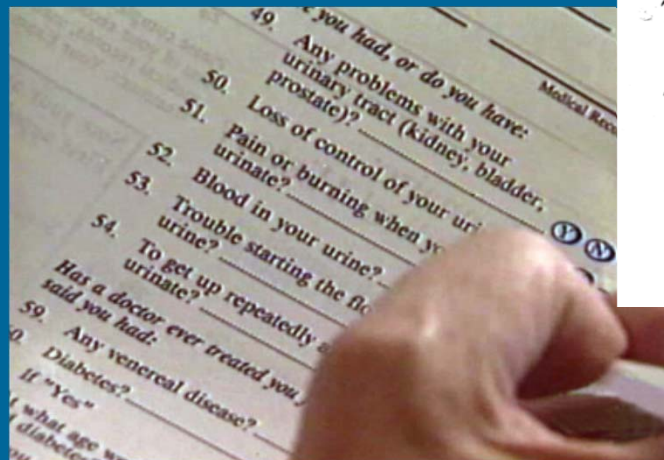
a beginning



1.3 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

Unconventional R.O.S. 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 molested as a child?**
- **Have you ever been held prisoner?**
- **Have you been tortured?**
- **Have you been raped?**

Benefits of a Biopsychosocial Preventive Approach

Biopsychosocial evaluation: **35% reduction in DOVs**
in subsequent year.
(120,000 patient sample)

Biomedical evaluation:
(Control group) **11% reduction in DOVs**
in subsequent year.
(700 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 in fact be an attempted solution.
- Treating the solution may be threatening and cause flight from treatment.
- Primary prevention is presently the only feasible population approach.
- Using this information clinically will be resisted, by us.

Further Information

www.cestudy.org

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www.HumaneExposures.com (3 books)