

The Repressed Role of Adverse Childhood Experiences in Adult Medical Care and Costs



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



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Summary of the ACE Study

- The ACE Study is a retrospective and prospective analysis in 17,337 middle-class *adults* of the effects of ten common categories of adverse life experiences during childhood.
- The very existence of these experiences was found to be quite unexpectedly high, but unrecognized because they are lost in time and further protected by shame, by secrecy, and by social taboos against routinely exploring certain realms of human experience.
- Their effect a half century later is powerfully and proportionately related to the number of *categories* of adverse life experiences in childhood, and thereby is a major determinant of well-being, health risks, occupational performance, mental illness, biomedical disease, and premature death. Are we smart enough to get and USE this information routinely?

What is the *Core* Diagnosis Here?



Age 28



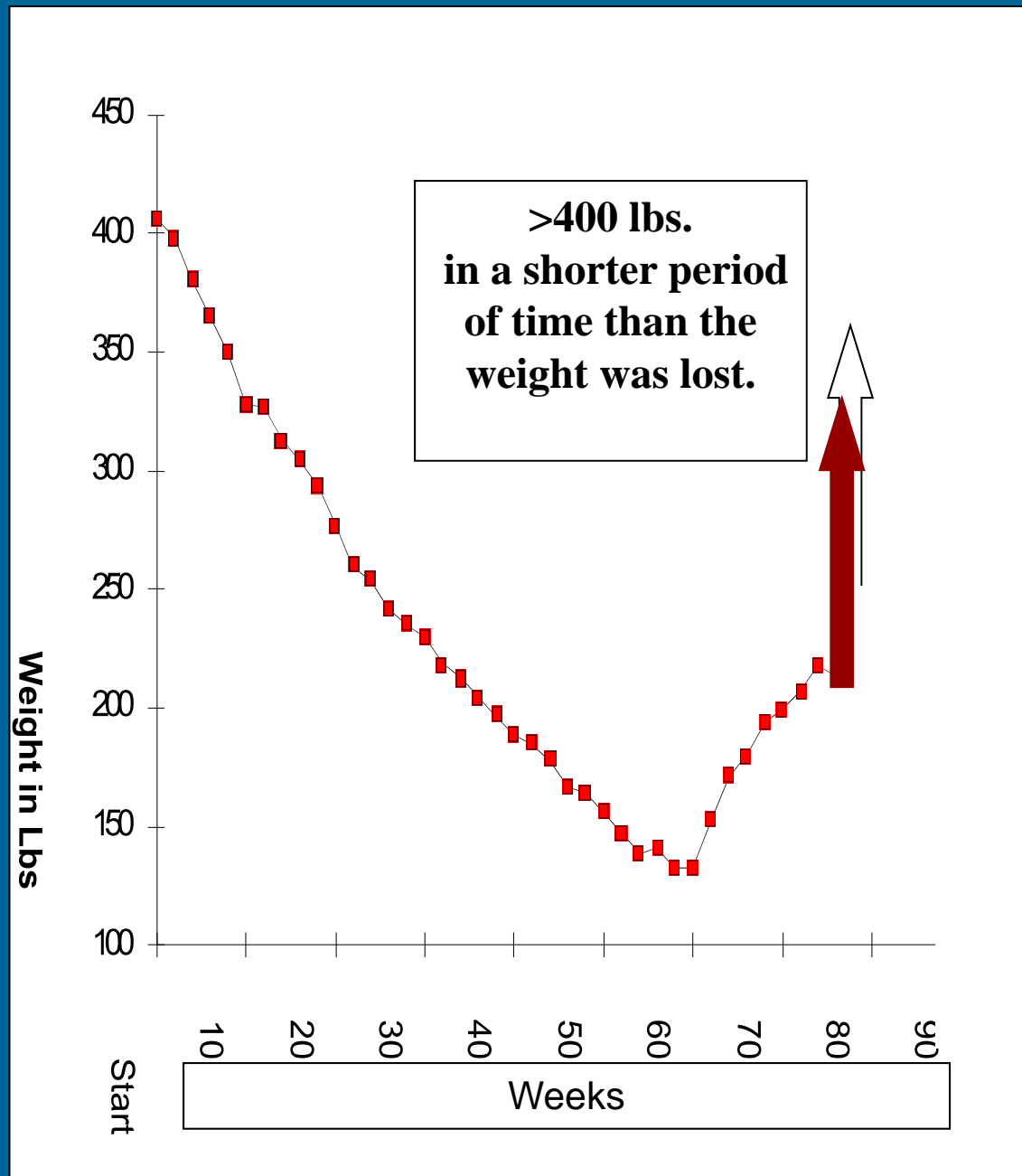
Age 29

In 51 weeks:
408 ➡ 132 lbs.

Which photo depicts the patient's *problem*?



Age 8



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*

17,433 adults

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%*



- 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



Patty's Sister

Obesity runs in this family. So does speaking English.
Familial obesity does *not* mean genetic.

Depression:

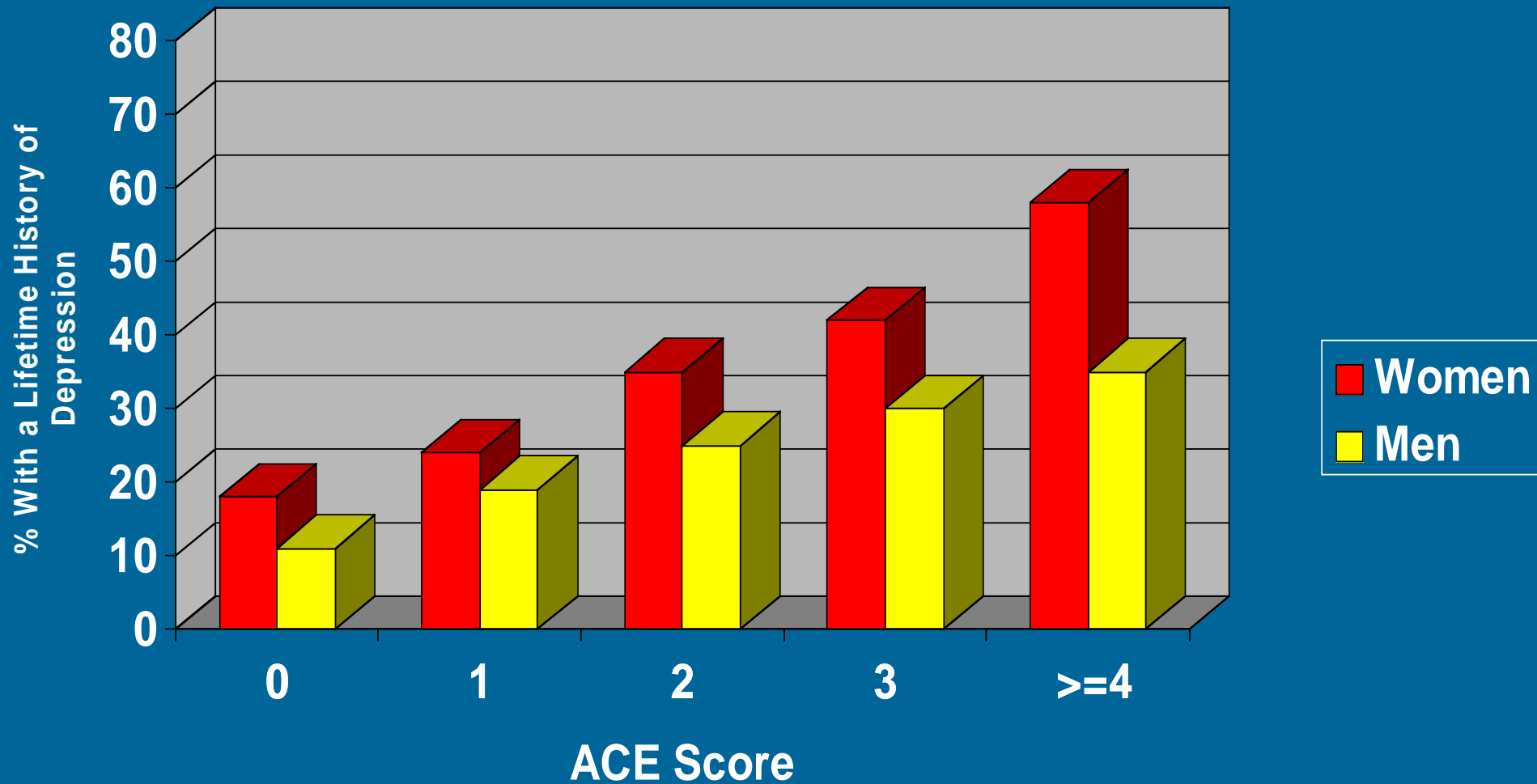
Most say depression is a disease.

Many say depression is genetic.

Some say it is due to a chemical imbalance.

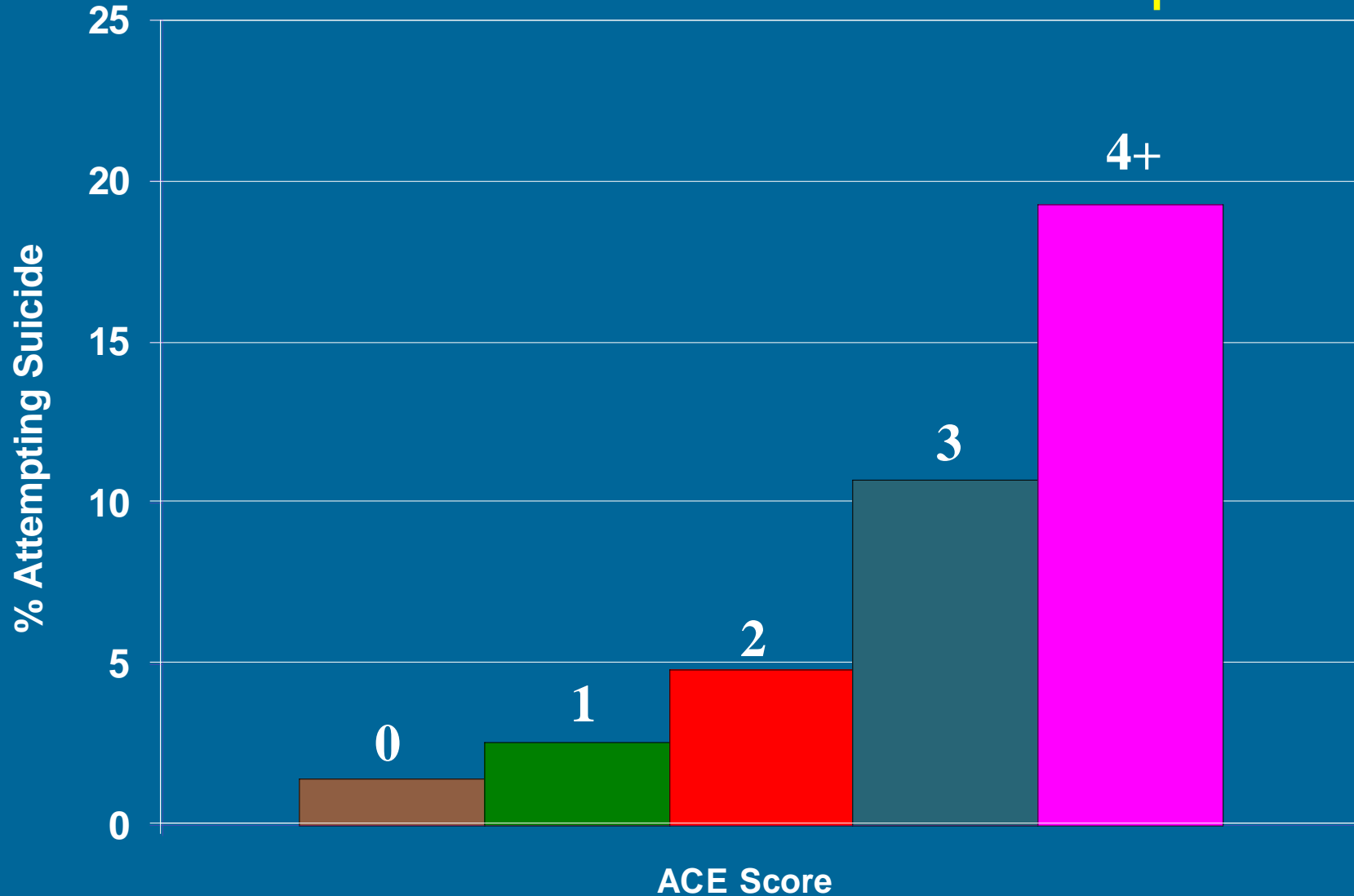


Childhood Experiences Underlie Chronic Depression



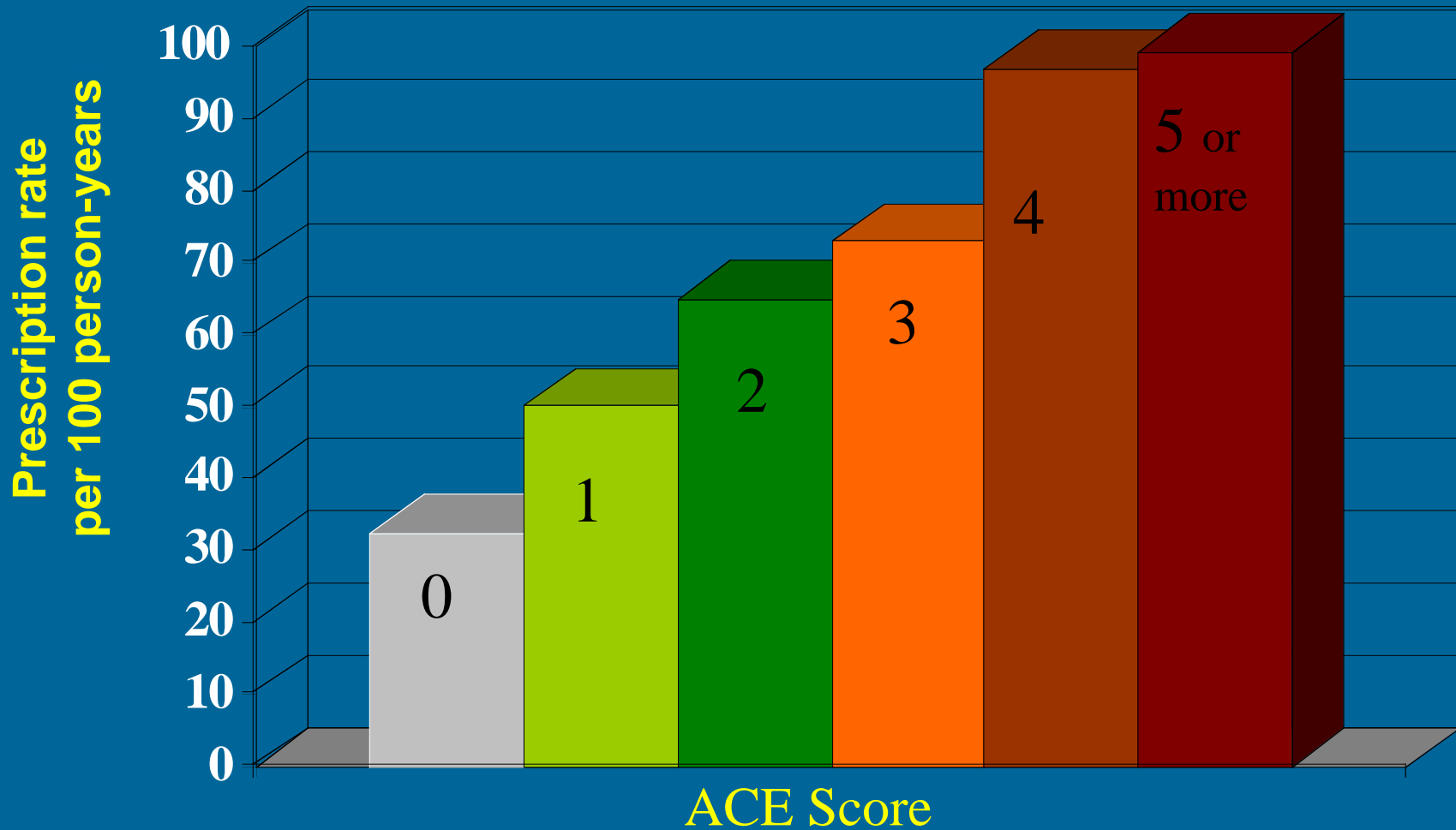
Well-being

Childhood Experiences Underlie Suicide Attempts



ACE Score and Rates of Antidepressant Prescriptions

approximately 50 years later



Risk Behaviors: 'Addictions'

Smoking to Self-Medicate



Distant consequences of abuse

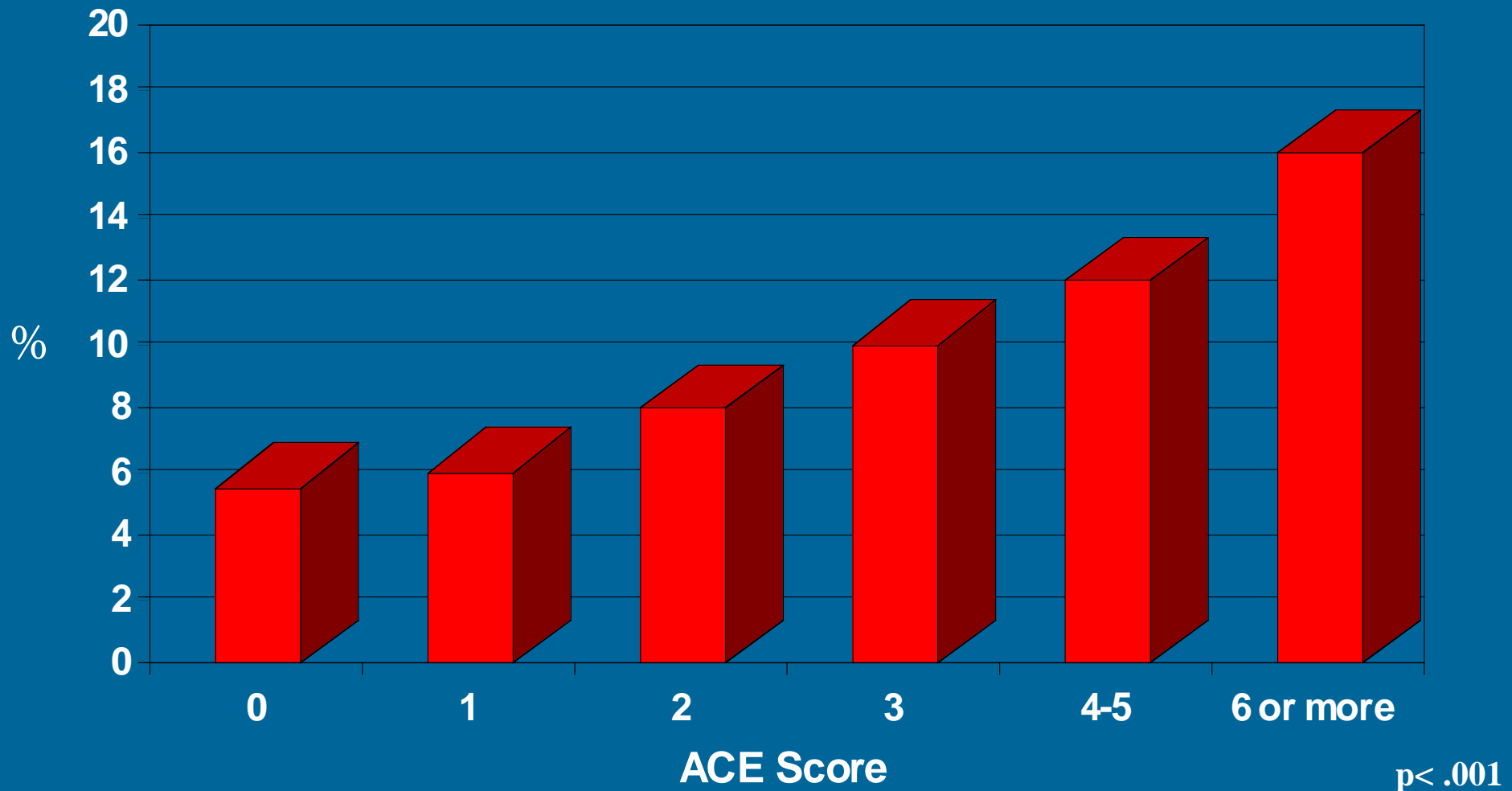
The traditional concept:

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

The ACE Study challenges that by showing:

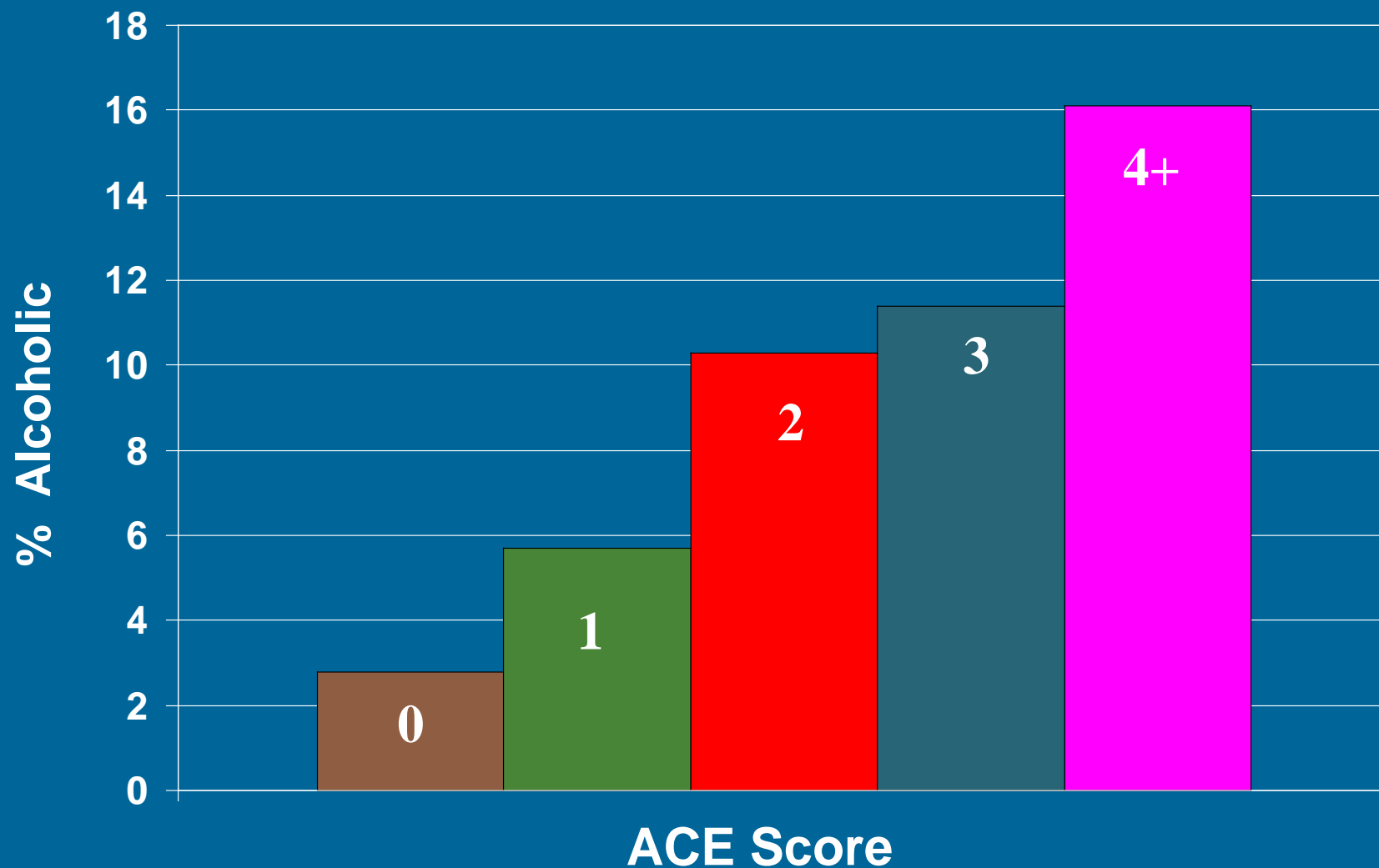
Addiction highly correlates with characteristics intrinsic to that individual's childhood experiences.

Adverse Childhood Experiences vs. Smoking as an Adult

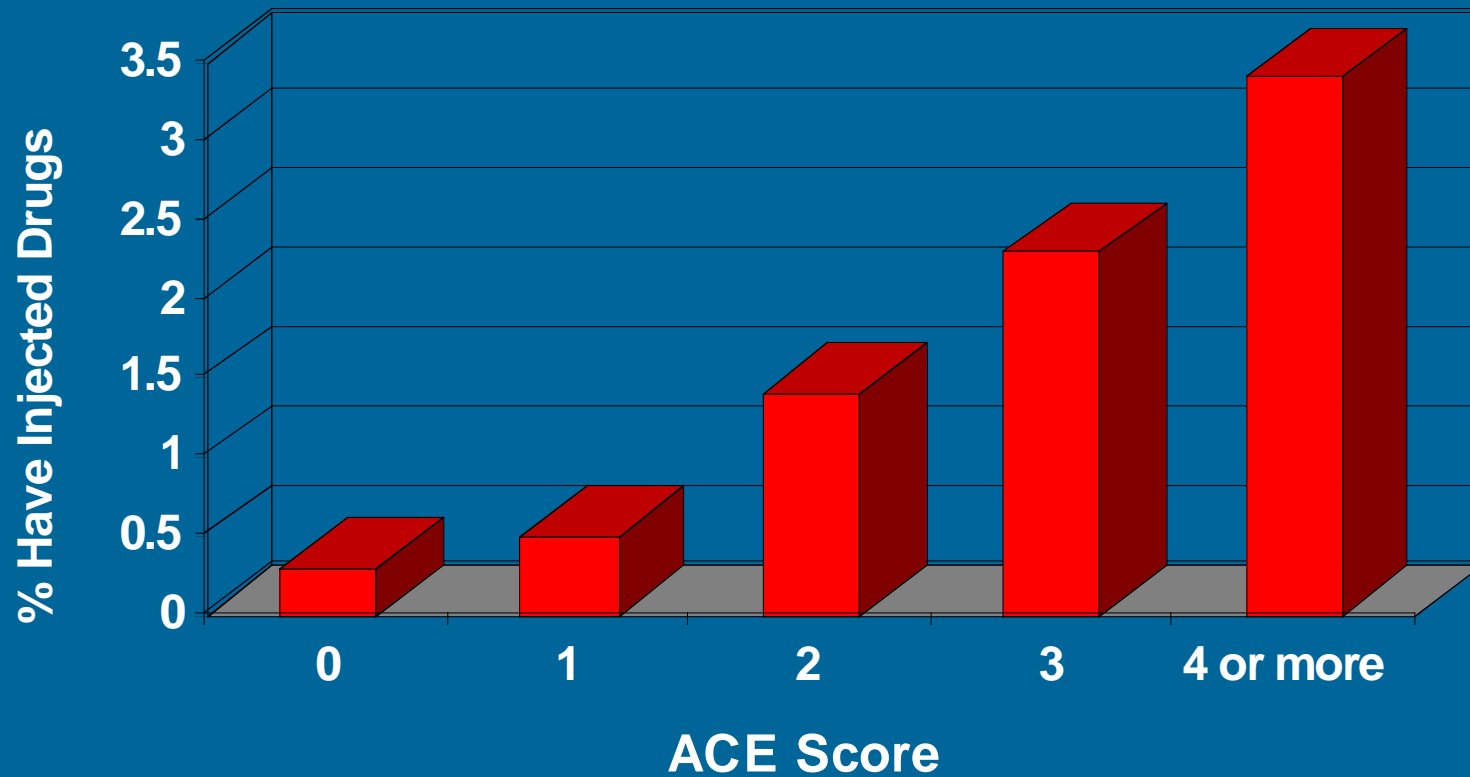


Health Risks

Childhood Experiences vs. Adult Alcoholism

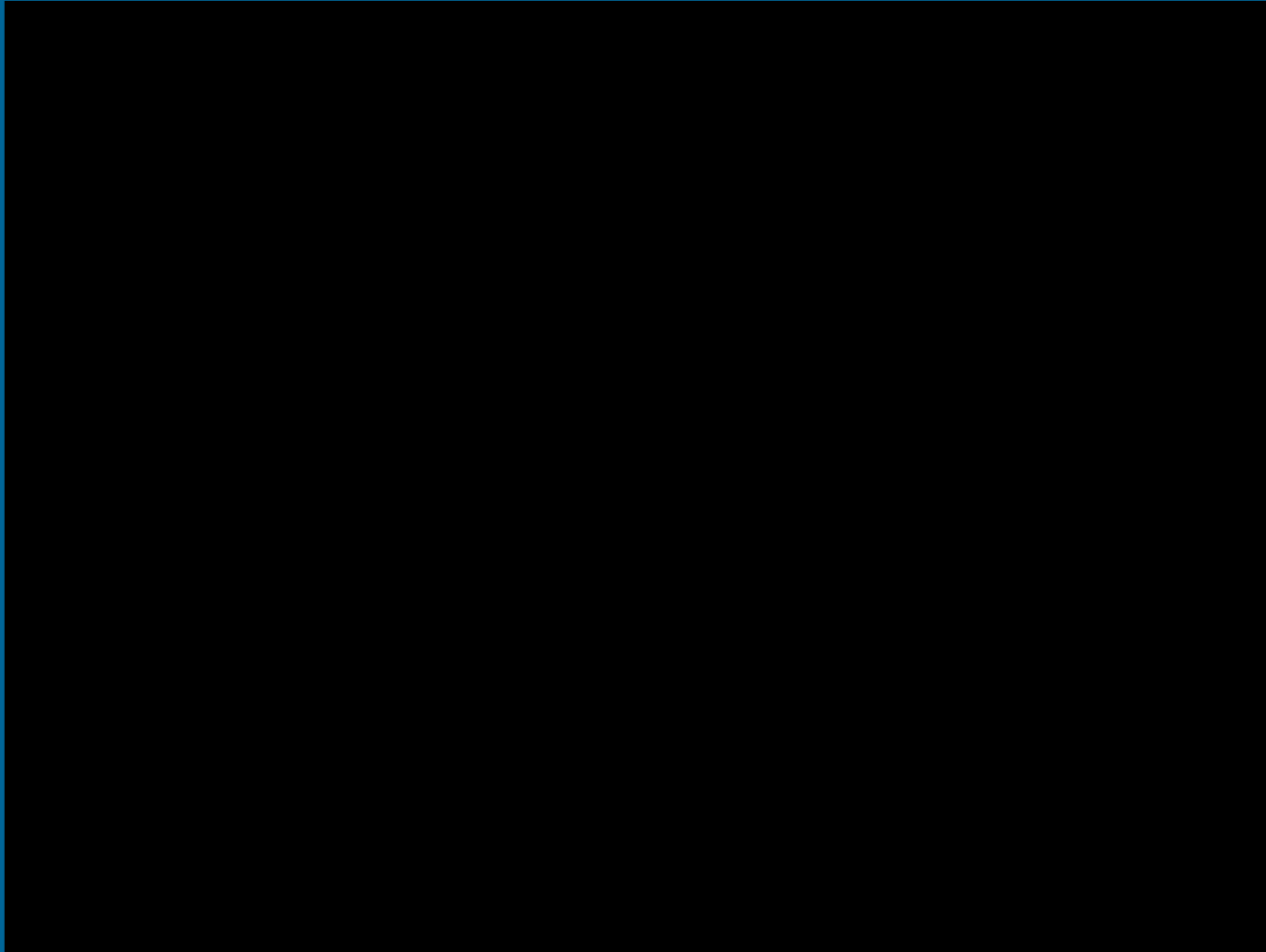


ACE Score vs Injection Drug Use



$p < 0.001$

The Hidden *Threat* of Weight Loss



The unspoken *benefits* of Obesity

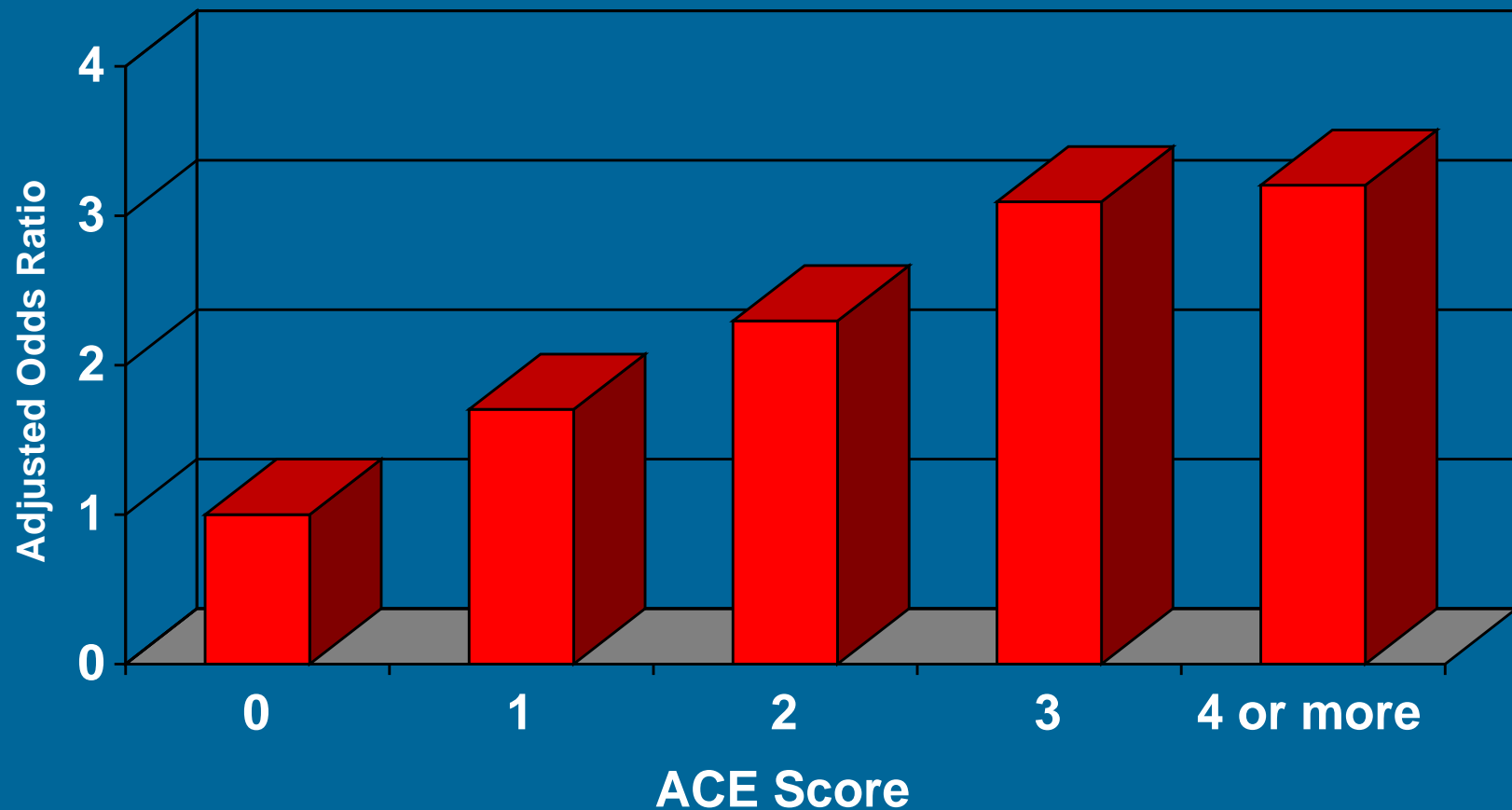
The Silent *Benefits* of Obesity

Physical safety in
being obese ...

Lost 158 pounds, but why did he gain it?

Health risks & Social function:

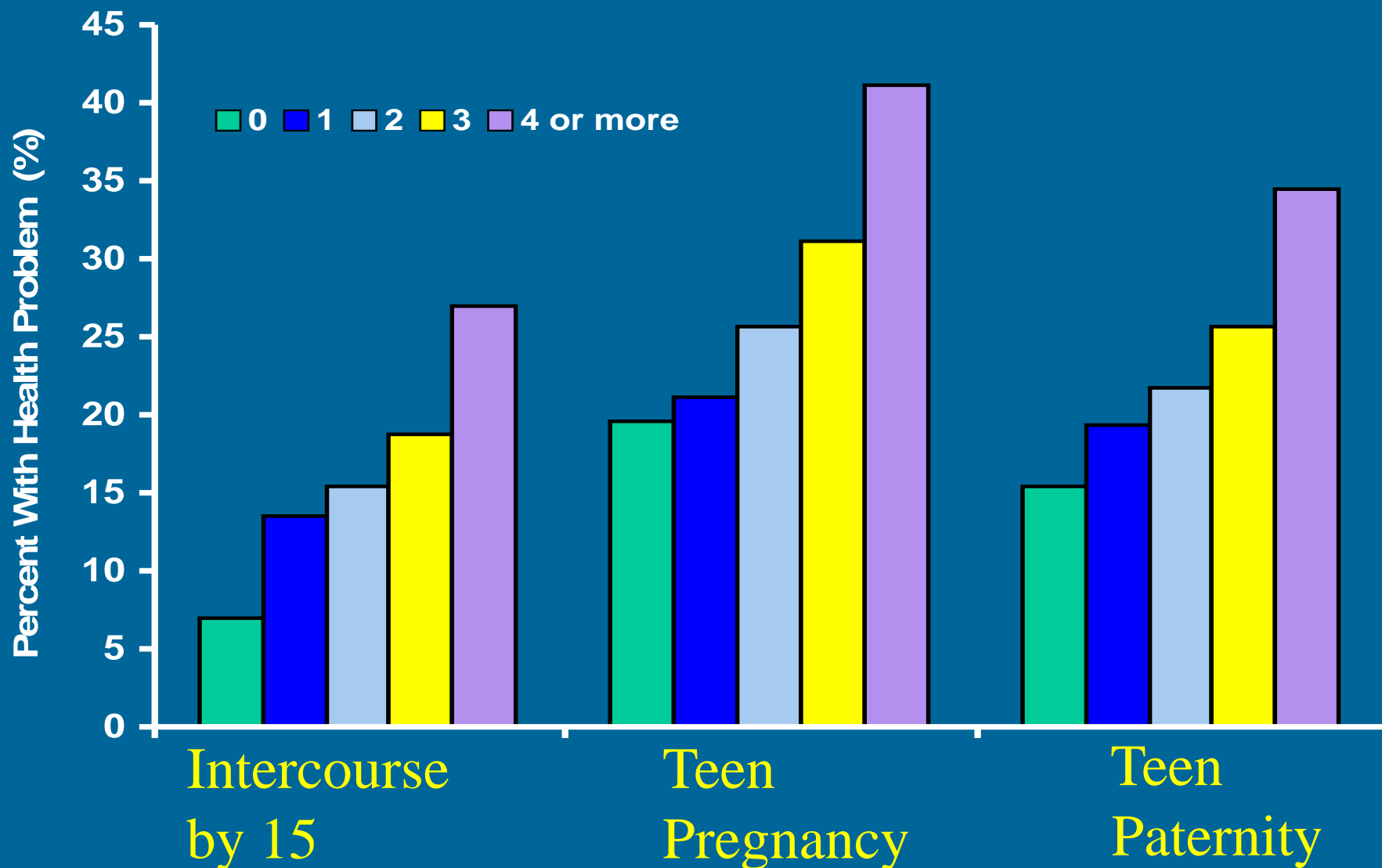
Looking for Love
ACE Score vs > 50 Sexual Partners



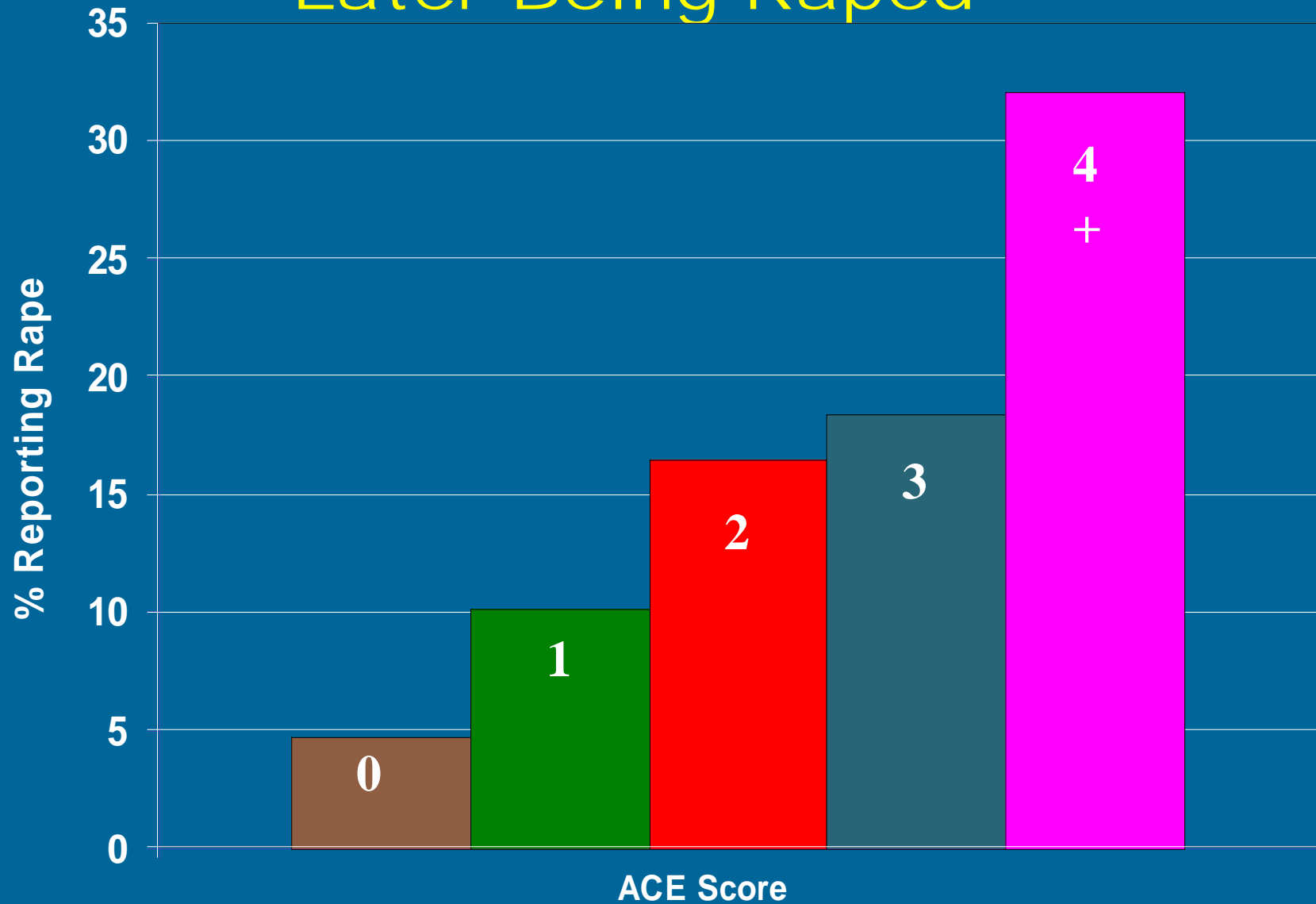
Social function

ACE Score and Teen Sexual Behaviors

Looking for love

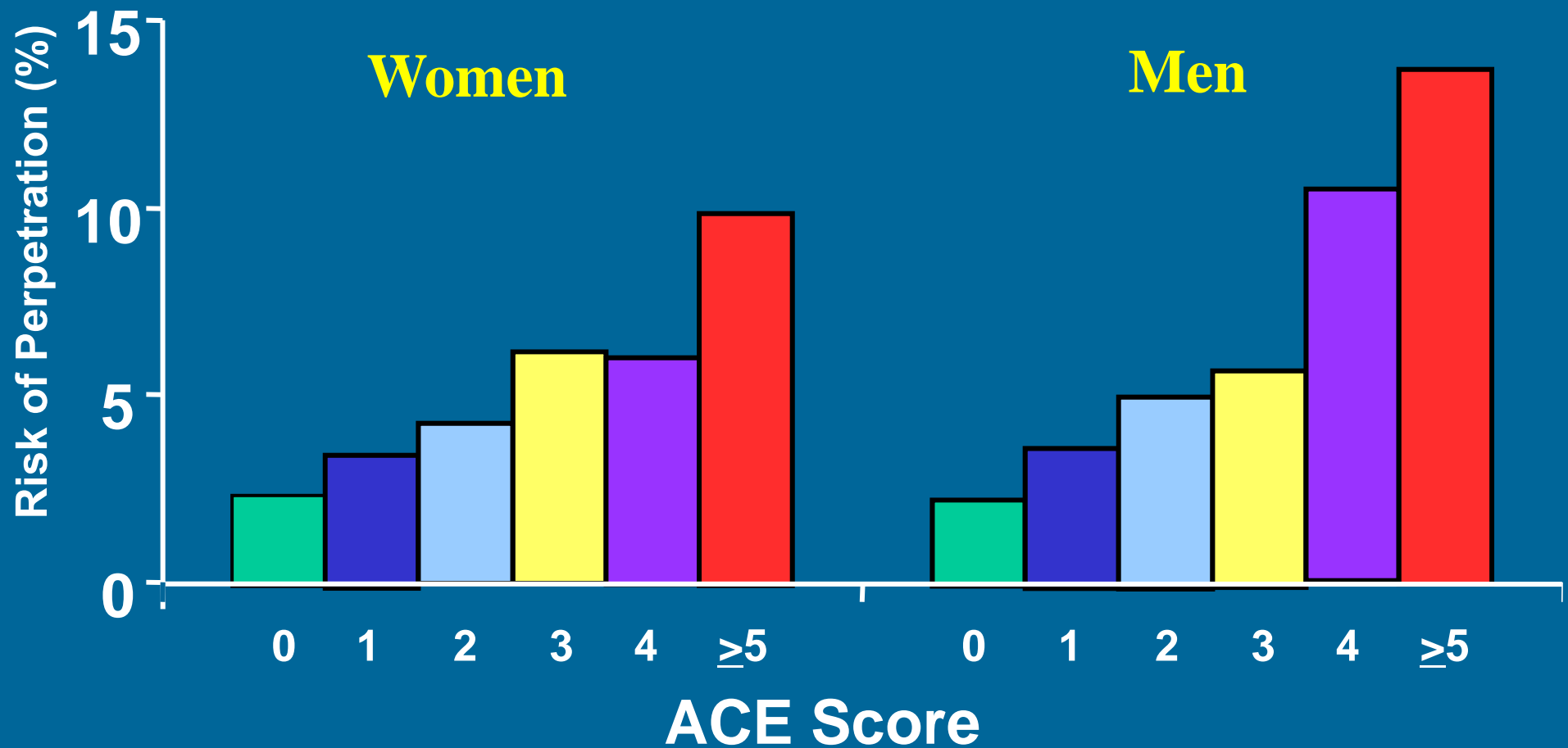


Childhood Experiences Underlie Later Being Raped



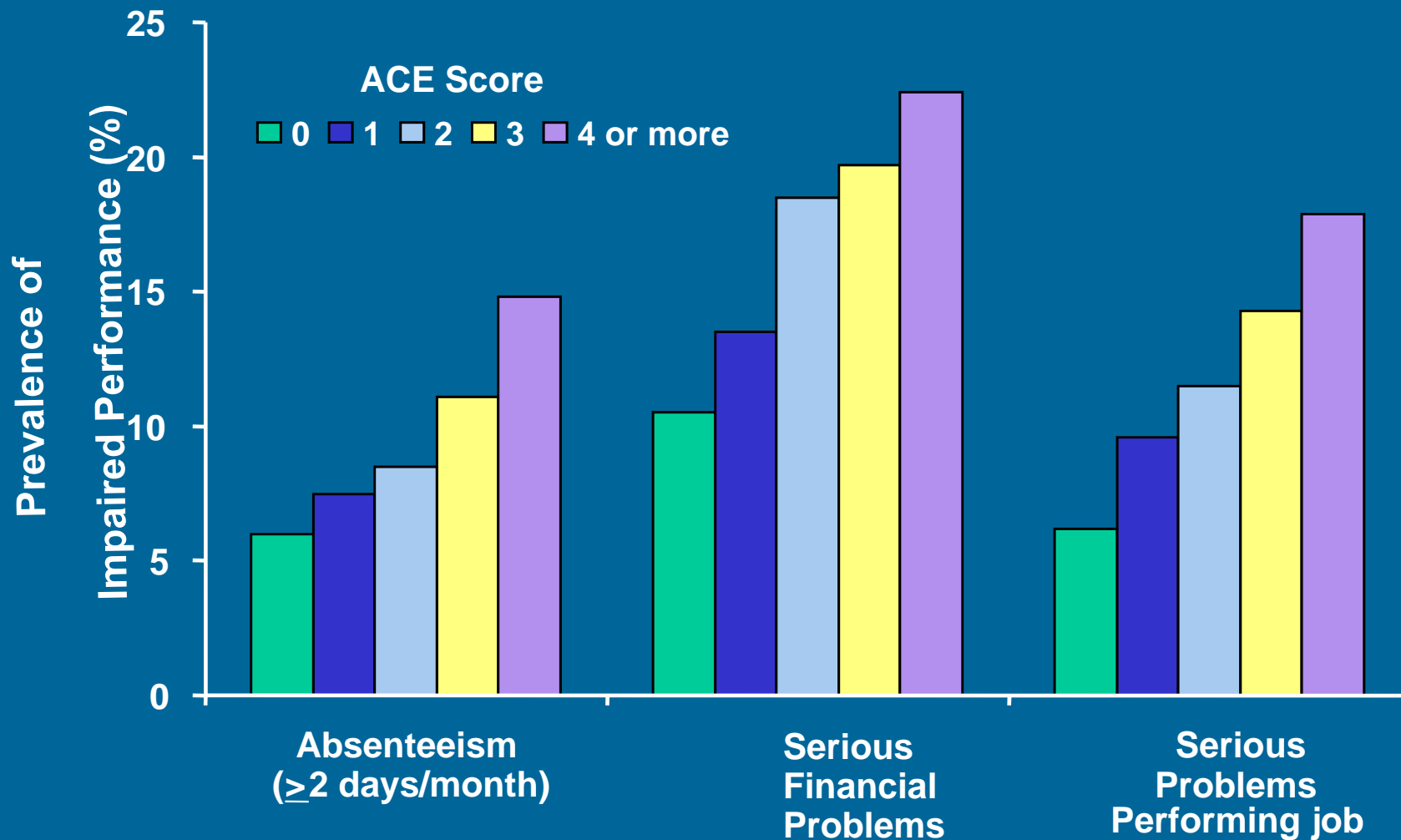
Social function:

ACE Score and the Likelihood of *Perpetrating* Domestic Violence



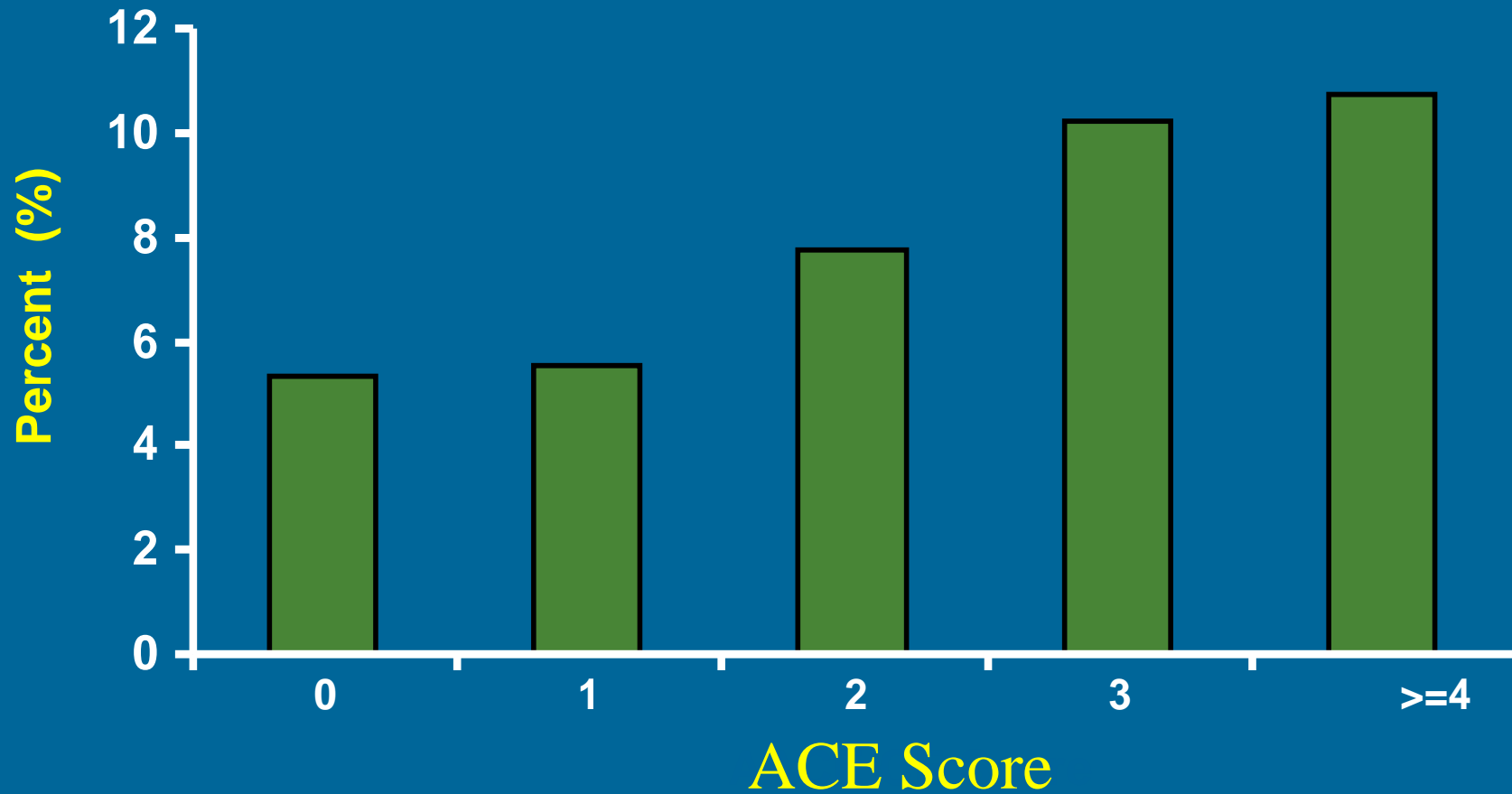
Social function:

ACE Score and Indicators of Impaired Worker Performance



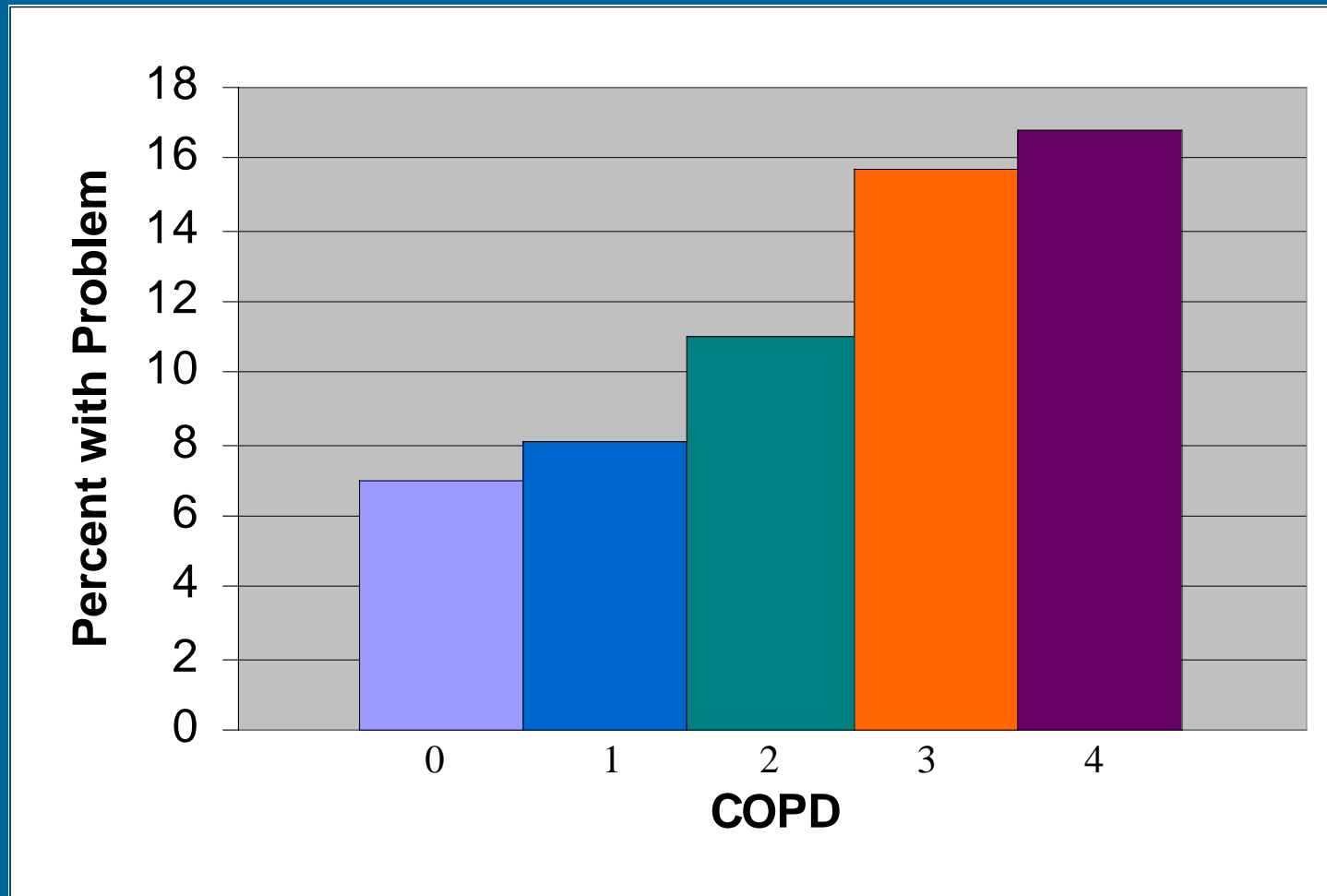
Biomedical Disease

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



Biomedical Disease

ACE Score vs. COPD



Biomedical disease

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?

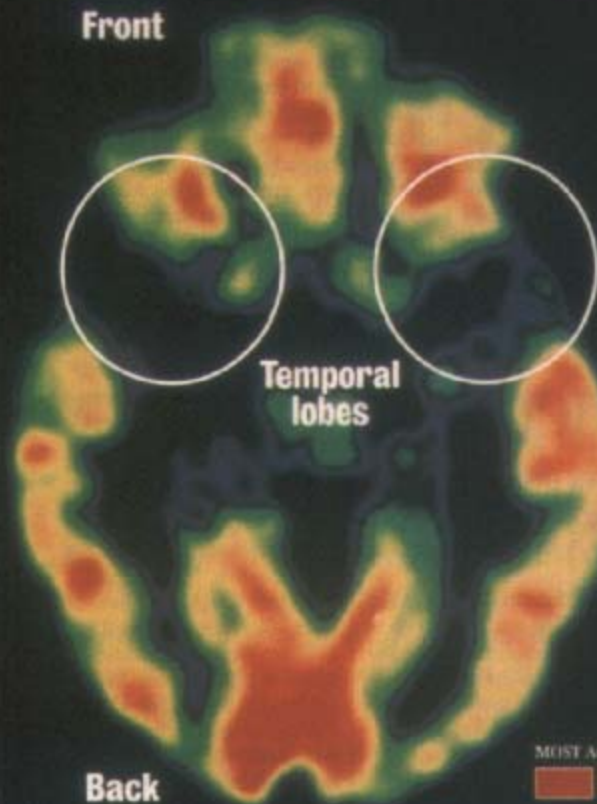
Why is treatment so difficult?

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.



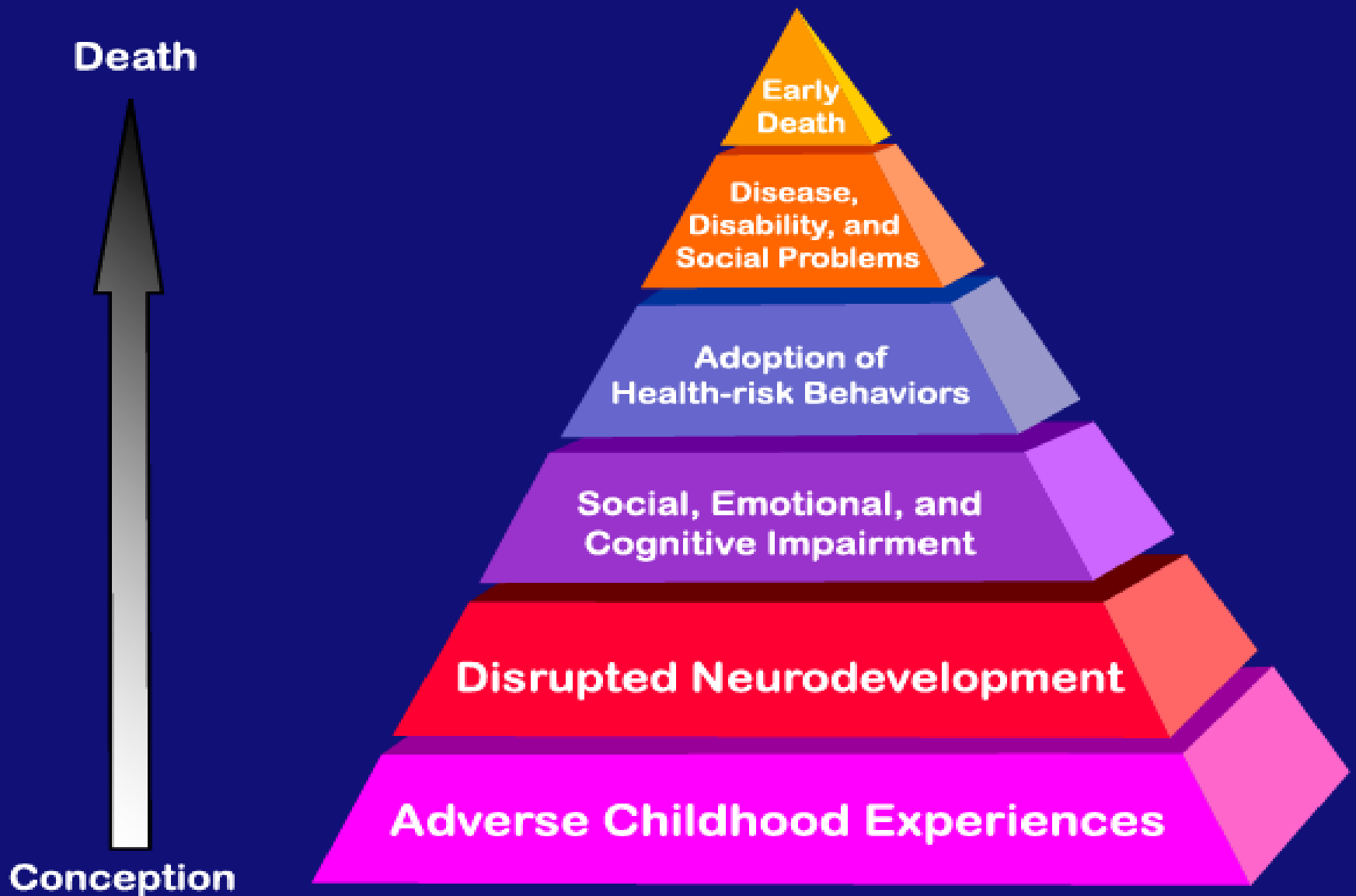
Front



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* cause of health risk behaviors, mental illness, social malfunction, disease, disability, premature 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.

A Patient's Insight into 'Addiction'

Frontiers of Treatment
in Obesity and Smoking

Interventions

Translating Research into Practice

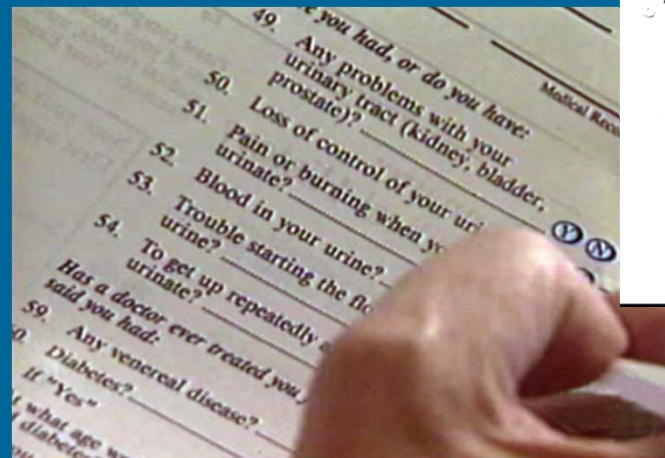
a beginning



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.



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

Interventions

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?**

Effect of Interventions

Benefits of Incorporating a Trauma Approach

Biomedical evaluation:
(Control group)

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, or parents, 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 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 threaten people and cause flight from treatment.
- Change will be resisted in spite of huge personal and economic benefits.

Further Information

www.ACEsTooHigh.com

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

www.AVAHealth.org (Detailed DVD on the ACE Study)

www.HumaneExposures.com (3 helpful books)

<http://xnet.kp.org/PermanenteJournal/winter02/deardoc.pdf>