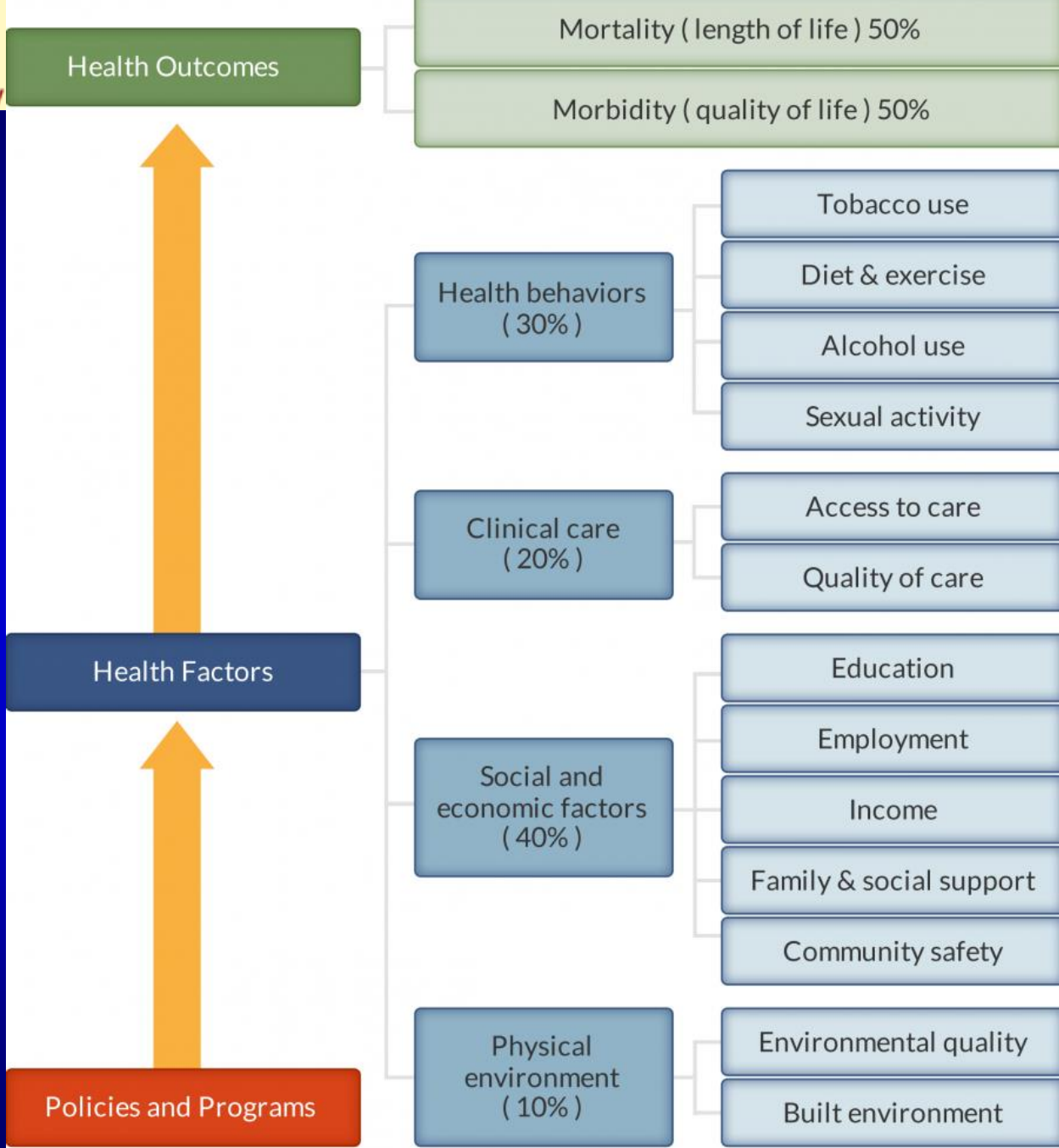
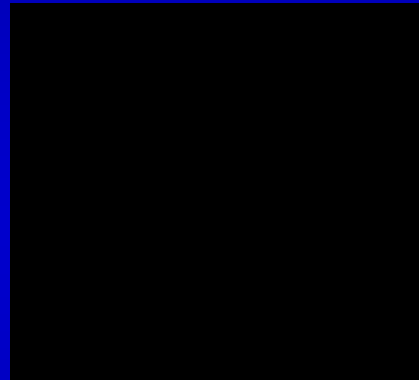


**The Best Science Changes the Way We See the World**



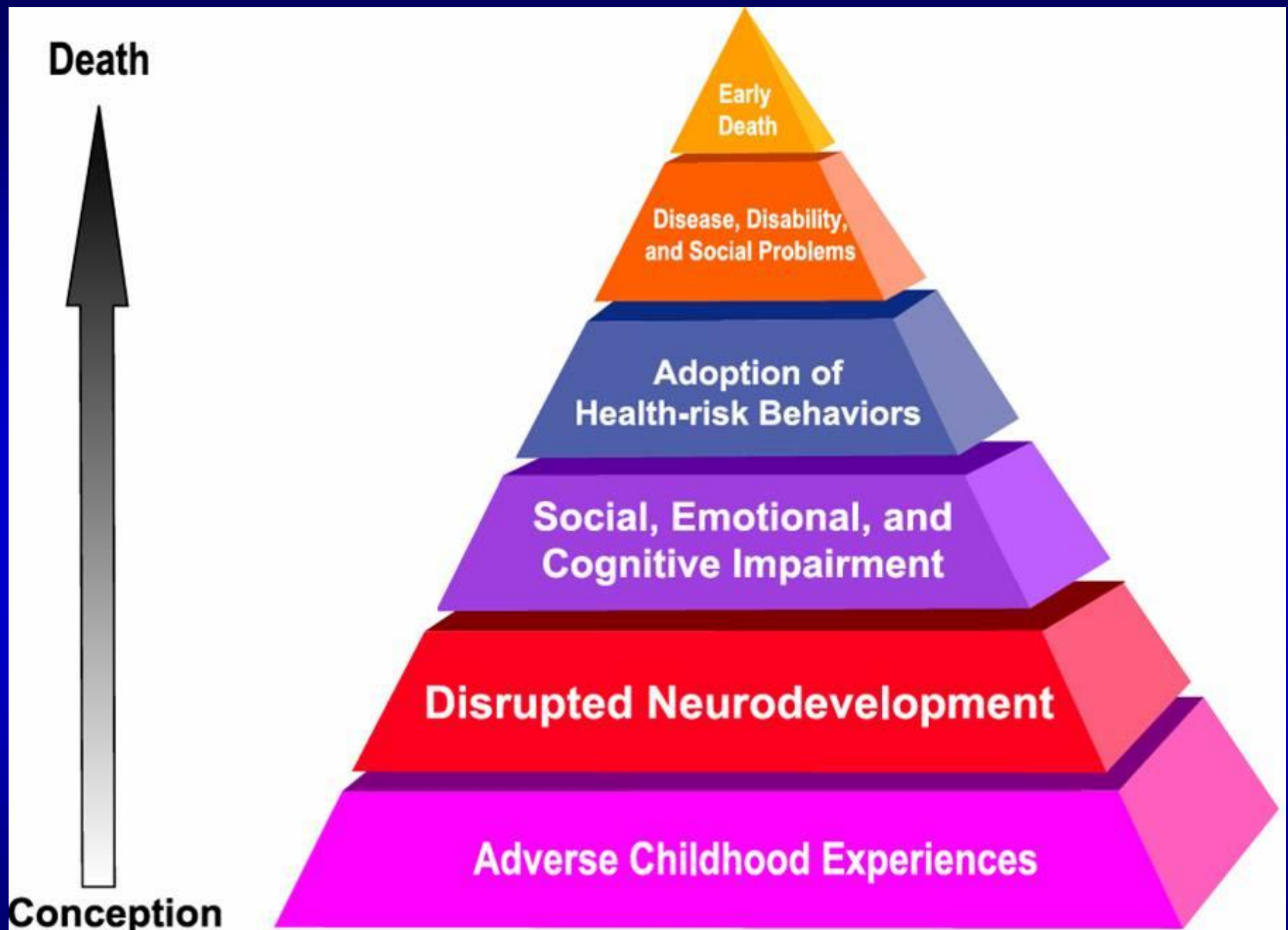


ACEs



Poor  
Health  
Outcomes





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



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Nadine Burke Harris:

# How childhood trauma affects health across a lifetime

TEDMED 2014 · 15:59 · Filmed Sep 2014

25 subtitle languages

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Nadine Burke Harris on Adverse Childhood Experiences

# ACE Score

- Abuse
  - Emotional
  - Physical
  - Sexual
- Neglect
  - Emotional
  - Physical
- Household dysfunction
  - Lost parent
  - Domestic Violence
  - Parental drug/alcohol abuse
  - Parental mental illness
  - Parent in jail

# ACE Study Questions

1. Before your 18<sup>th</sup> birthday: Did a parent or other adult in household *often or very often* swear at you, insult you, put you down, humiliate you, or make you fear being physically hurt?
2. Often/very often push, grab, slap or throw something at you, hit so hard you had marks or injuries?
3. Did an adult or person 5 years older than you touch or fondle you (or have you touch them) in a sexual way; attempt to have oral, anal, or vaginal intercourse with you?
4. Often or very often feel no one in family loved you or thought you were special; family didn't look out for each other, feel close or support each other?
5. Often or very often feel you didn't have enough to eat, had to wear dirty clothes, had no one to protect you? Parents too drunk or high to take care of you, or to the doctor?
6. A biological parent was lost to you due to separation, divorce, abandonment, or other reason?
7. Was mother or stepmother often/very often pushed, grabbed, slapped, had something thrown at her? Kicked, bitten, hit with a fist, hit with something hard? Threatened with a weapon?
8. Did you live with a problem drinker or alcoholic, or with someone who used street drugs?
9. A household member was depressed or mentally ill, or attempted suicide?
10. A household member went to prison?

-Rob Anda, MD, MS, Co-Principle Investigator

# Conclusions

- ACEs are pervasive and very common
- ACEs have significant adverse effects on mental and physical health throughout life



## Felitti: Serendipity, a Fortuitous Event

↳ **Curiosity**

↳ **Case Study- tested hypothesis**

↳ **Published Research 1993**

↳ **Nothing !**

↳ **Met Dr. Anda**

↳ **Conducted population study**

↳ **Discovered the most important data set of their lifetimes!**



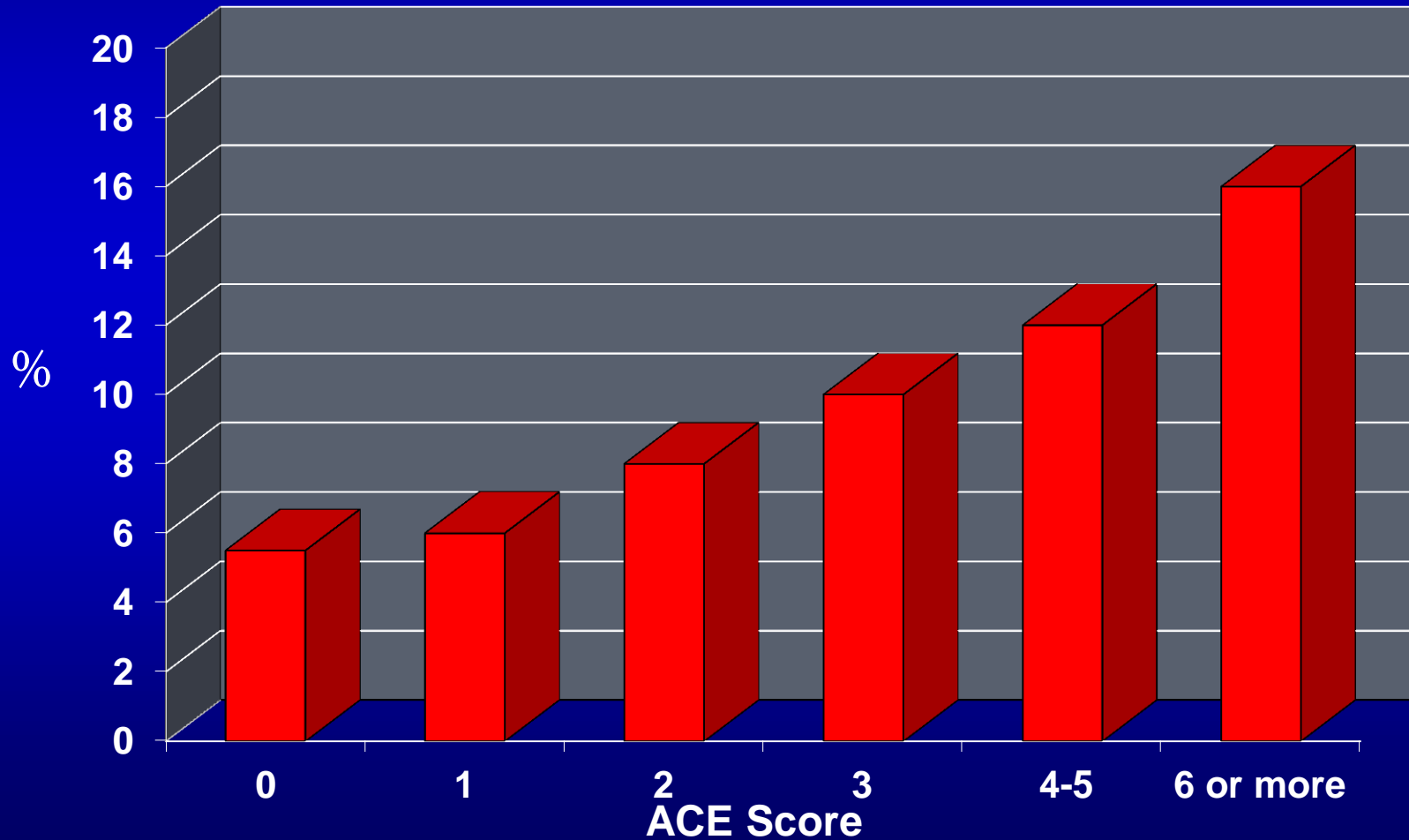
# Paradigm Shift

Addiction is a  
problem

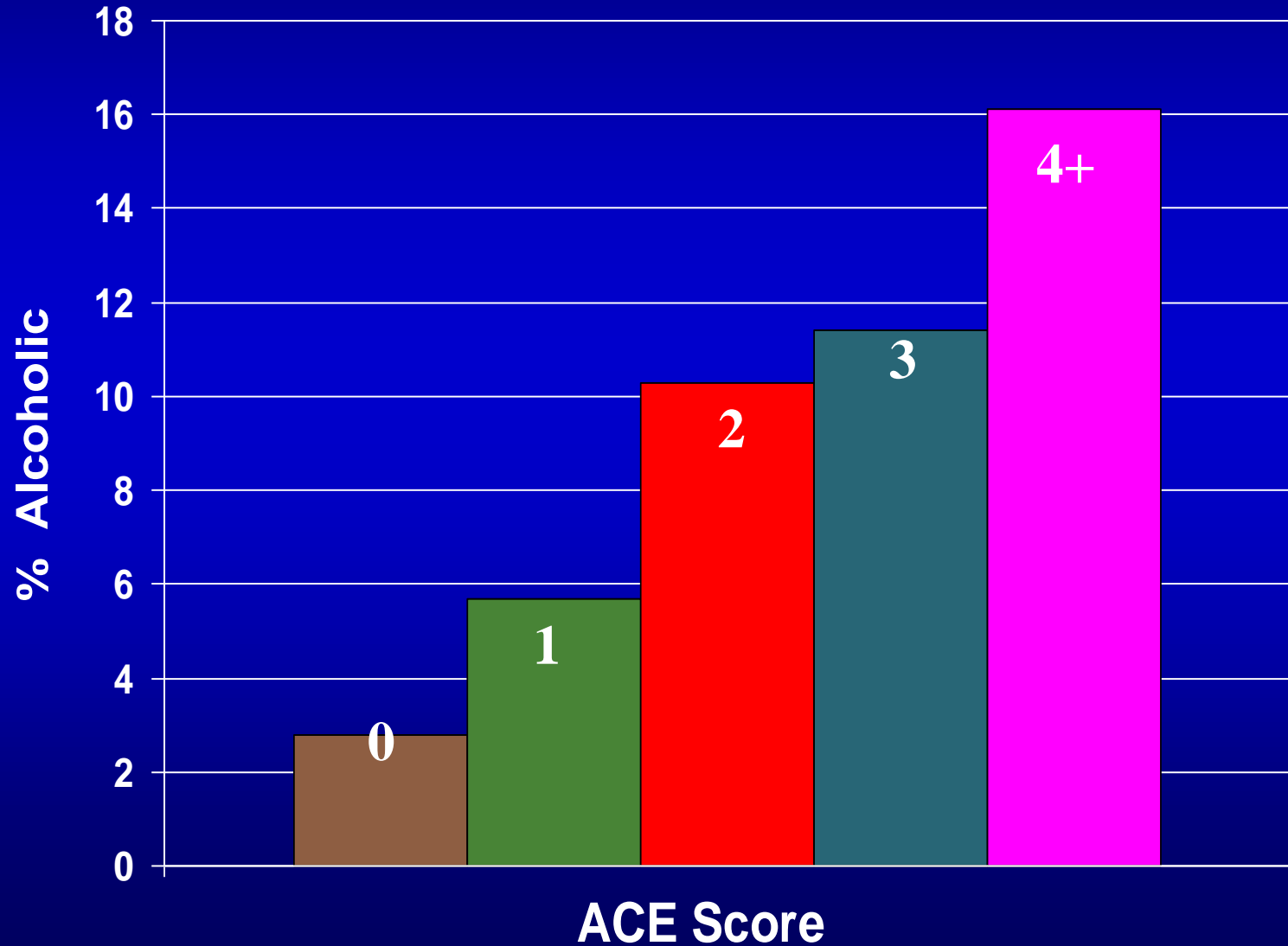
Addiction is a  
solution



# Current Smoking

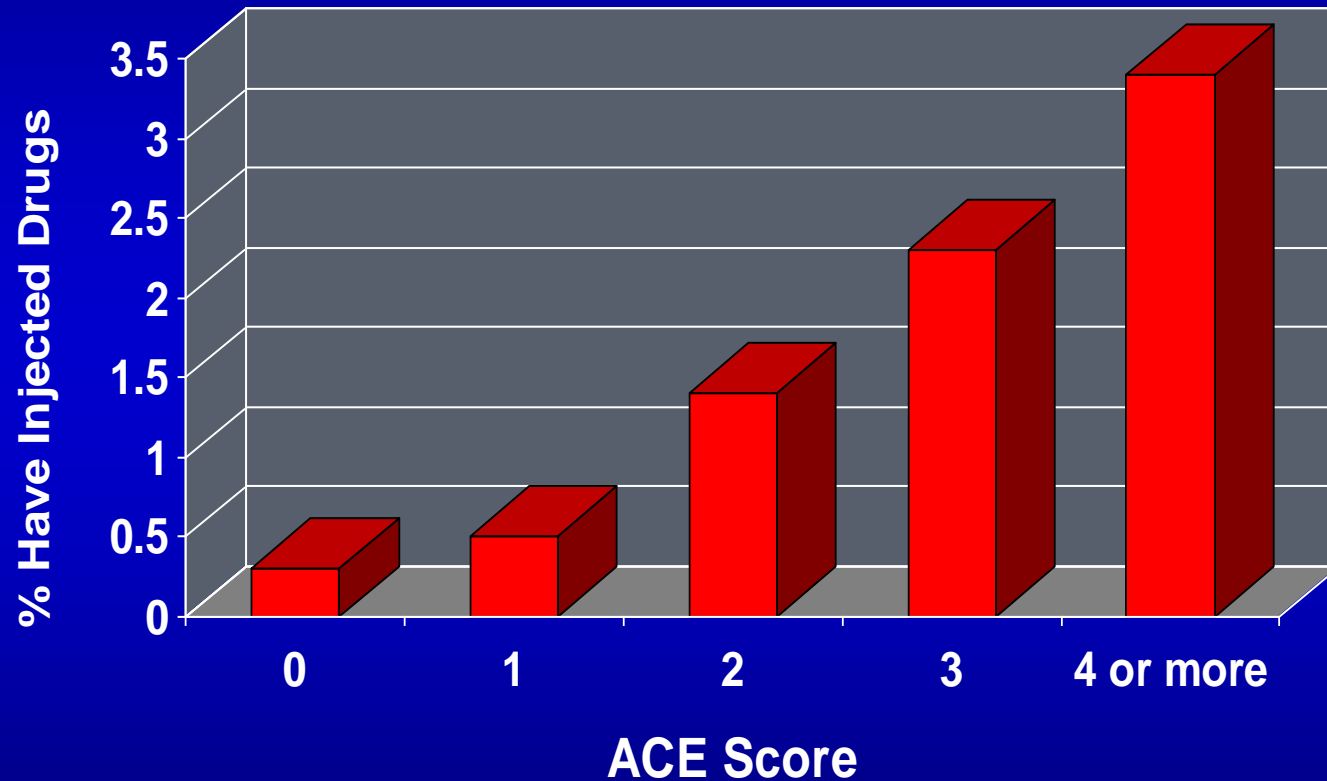


# Adult Alcoholism



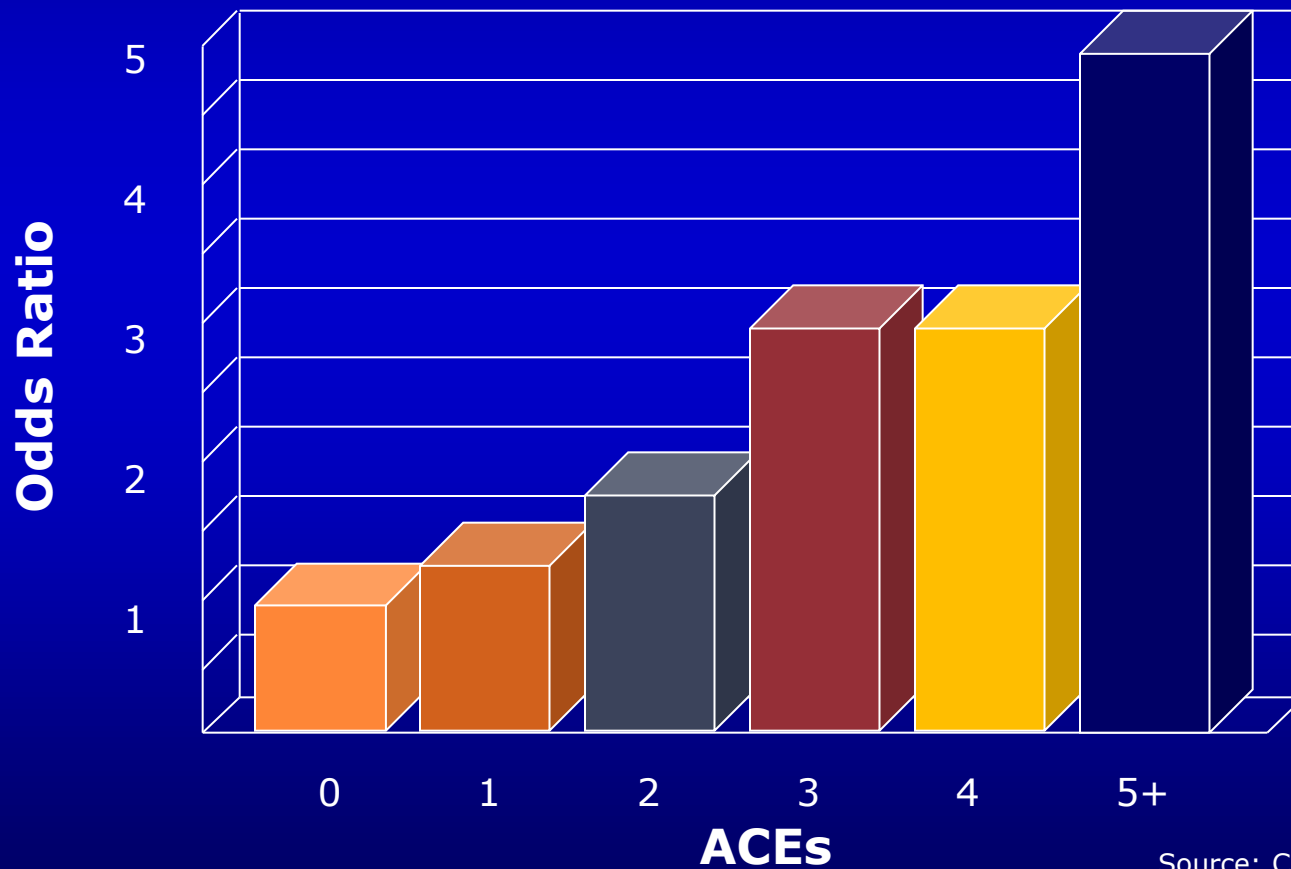


# Intravenous Drug Use



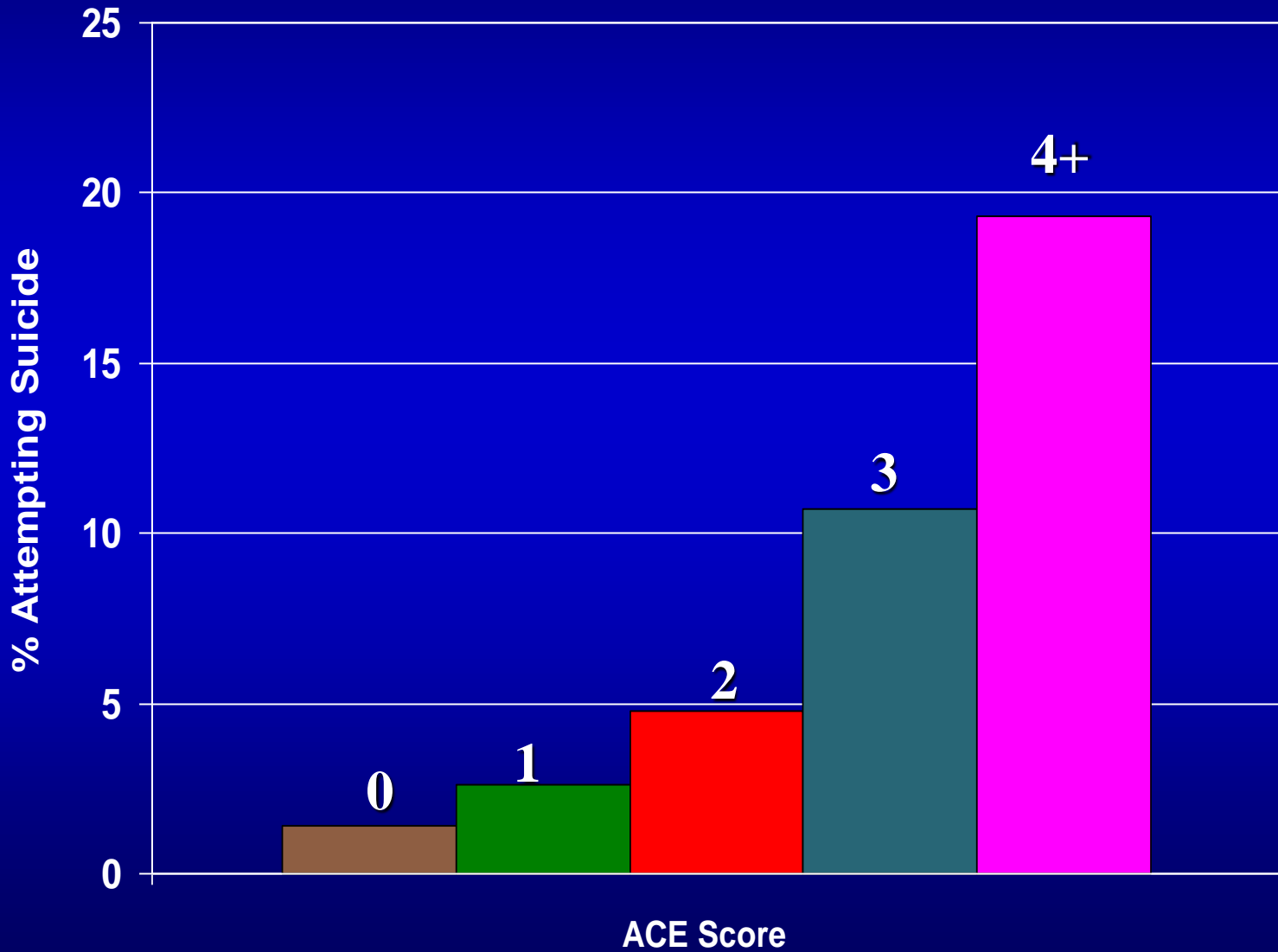
**N = 8,022**    **p<0.001**

# Risk for Depression



Source: Chapman et al, 2004

# Attempted Suicide



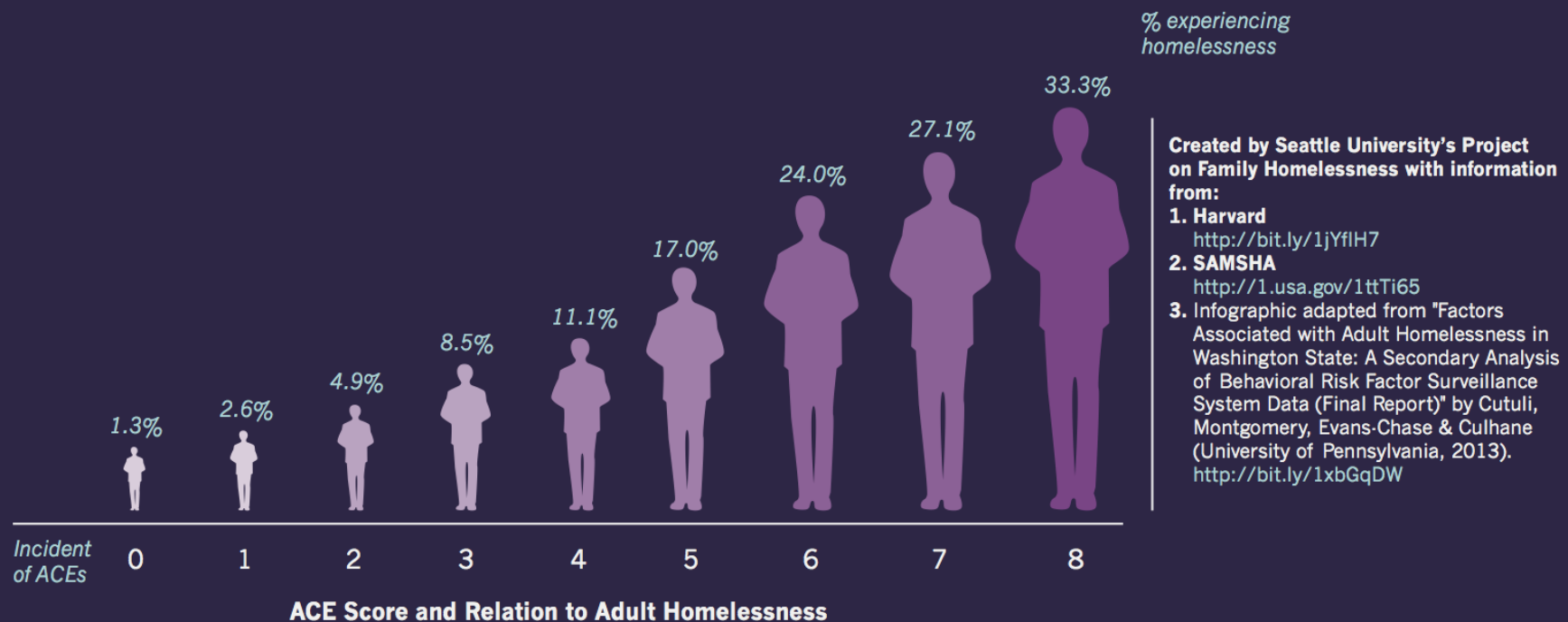
# ACE SCORE AND RELATION TO ADULT HOMELESSNESS

## What is toxic stress?

Toxic stress is long lasting stress over which the child has very little control. Involving the chronic elevation of stress hormones and a child's stress response system, it often occurs when a child must confront stressors without a safe, supportive adult to buffer their impact. It can be caused by abuse, neglect, and poverty and other ACEs.<sup>1</sup>

## What is an ACE?

Adverse childhood experiences (ACEs) are stressful or traumatic experiences, including abuse, neglect and a range of household dysfunction such as witnessing domestic violence, or growing up with substance abuse, mental illness, parental discord, or crime in the home. They can cause toxic stress and can lead to a variety of negative outcomes, including adult homelessness<sup>2</sup>.



*Proportion of Washington residents experiencing adult homelessness (among participants in Washington's Behavioral Risk Factor Surveillance System).<sup>3</sup>*



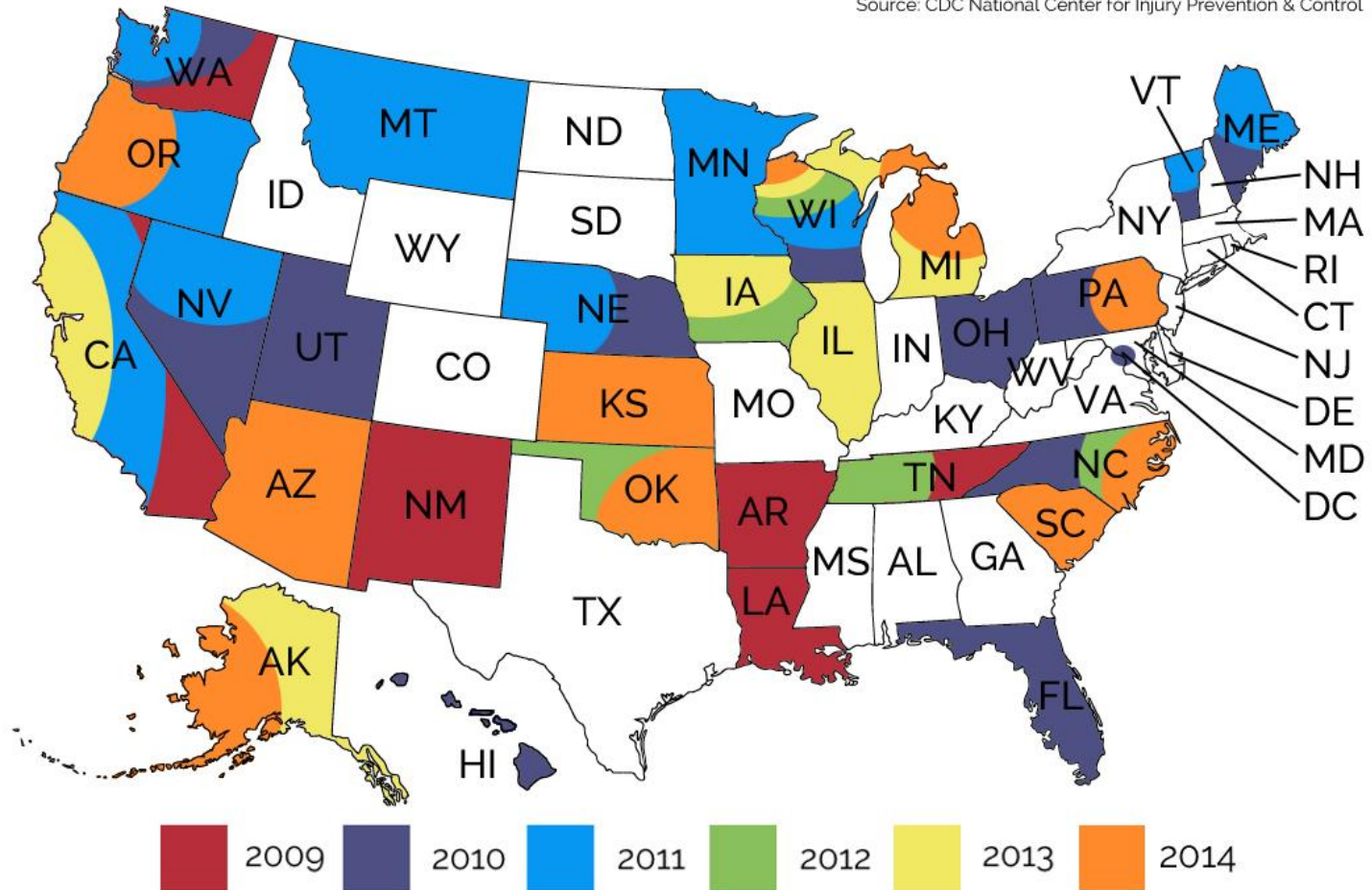
# Life Expectancy

“People with 6 or more ACEs died 20 years earlier on average than those without ACEs”

People with 6 + ACEs have a 1 in 5 chance that they will try to kill themselves

# States Collecting ACEs Data 2009 - 2014

Source: CDC National Center for Injury Prevention & Control



**College Students**      **Substance Use Disorders**  
**Prison Inmates**  
**Premature Birth**      **Veterans & Military**  
**Teen Parents**  
**Children/Youth in Foster Care**  
**Homeless**  
**Victims of Intimate Partner Violence**      **Research**      **LGBT**  
**Inner City**  
**Pregnant Women**  
**Early Child Care Providers**  
**Poverty**      **Racial & Ethnic Minorities**  
**Children whose Parents were Alcoholics**  
**Chronic Disease**

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- Health topics
- Data
- Media centre
- Publications
- Countries
- Programmes**
- Governance
- About WHO

## Violence and Injury Prevention

VIP home

Violence

Road traffic injuries

Child injuries and violence

Other injury topics

Data collection

Care and services

Disability and rehabilitation

### Adverse Childhood Experiences International Questionnaire (ACE-IQ)

Adverse Childhood Experiences (ACE) refer to some of the most intensive and frequently occurring sources of stress that children may suffer early in life. Such experiences include multiple types of abuse; neglect; violence between parents or caregivers; other kinds of serious household dysfunction such as alcohol and substance abuse; and peer, community and collective violence.

It has been shown that considerable and prolonged stress in childhood has life-long consequences for a person's health and well-being. It can disrupt early brain development and compromise functioning of the nervous and immune systems. In addition because of the behaviours adopted by some people who have faced ACEs, such stress can lead to serious problems



# Correlation $\neq$ Causation





Center on the Developing Child  
HARVARD UNIVERSITY



Key Concepts

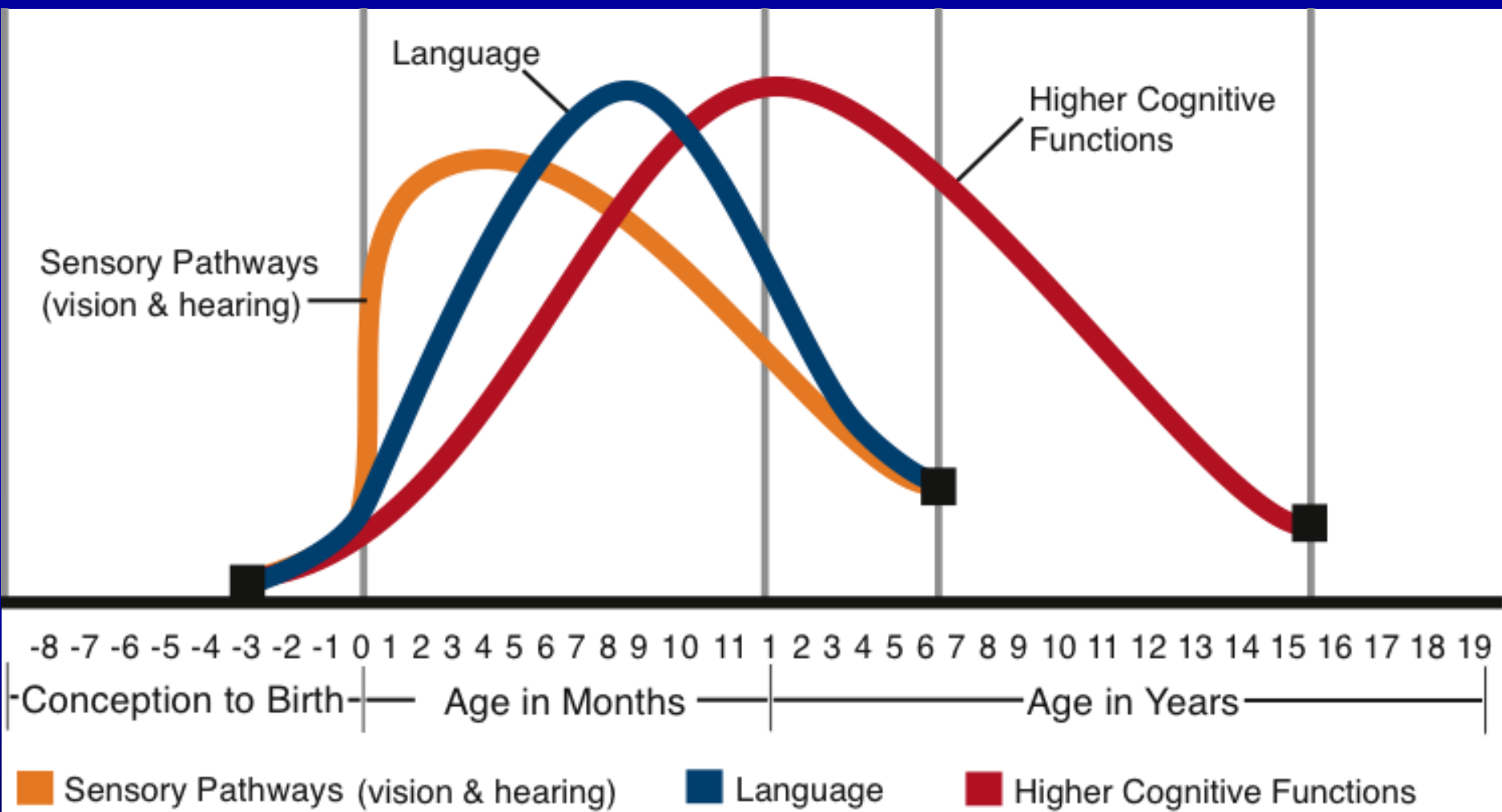
# Toxic Stress

▶ Watch the Overview Video

The future of any society depends on its ability to foster the healthy development of the next generation. Extensive research on the biolog

# It's all about the brain!

*Early experiences determine how brains are wired.*





# The answer is 17 years, what is the question: understanding time lags in translational research

Zoë Slote Morris<sup>1</sup> • Steven Wooding<sup>2</sup> • Jonathan Grant<sup>2</sup>

<sup>1</sup>Institute of Public Health, University of Cambridge, Cambridge CB2 0SR, UK

<sup>2</sup>RAND Europe, Cambridge CB4 1YG, UK

Correspondence to: Jonathan Grant. Email: [jgrant@rand.org](mailto:jgrant@rand.org)

## DECLARATIONS

### Competing interests

None declared

### Funding

This is an independent paper funded by the Policy Research Programme in the

## Summary

This study aimed to review the literature describing and quantifying time lags in the health research translation process. Papers were included in the review if they quantified time lags in the development of health interventions. The study identified 23 papers. Few were comparable as different studies use different measures, of different things, at different time points. We concluded that the current state of knowledge of time lags is of limited use to those responsible for R&D and knowledge transfer who face difficulties in knowing what they should or can do to reduce time lags. This effectively 'blindfolds' investment decisions and risks wasting effort.

Barriers to Action:

Okay, but this does not  
relate to me ...

*Those poor children over  
there....*



# IA – It's about Partnering

“A hard look at the public health disaster calls for both the prevention and treatment ACEs. This will require integration of educational, criminal justice, healthcare, mental health, public health, and corporate systems that involves sharing of knowledge and resources that will replace traditional fragmented approaches to burden of adverse childhood experiences in our society.”

Robert Anda, quoted in ACES Too High News

# Innovative Approaches (2010 -)

- Public Health
- Schools
- HHS/Foster Care
- Justice
- Mental health/Community Resiliency Model
- Health Care (MAHEC, Pediatric Collab)



# Innovative Approaches (2010 -)

## Increasing Awareness

- Website

– [www.buncombeaces.org](http://www.buncombeaces.org)

- Speakers Bureau

– Business leaders

– Bar Association

– Faith community

- ACEs Southeastern Summit

# Washington School Classroom (30 Students)

## Adverse Childhood Experiences (ACEs)

6 students with no ACE

5 students with 1 ACE

6 students with 2 ACEs

3 students with 3 ACEs

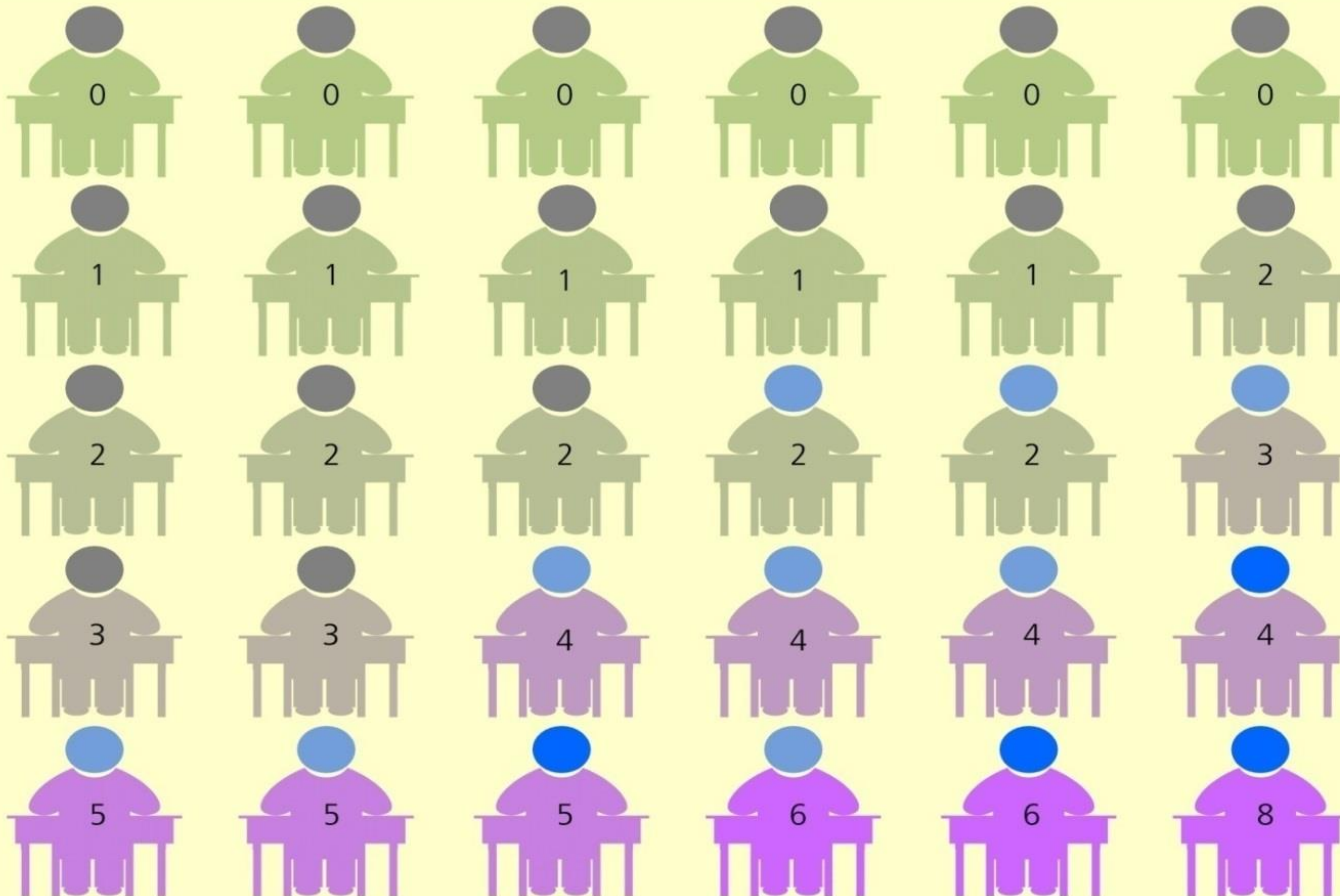
7 students with 4 or 5 ACEs

3 students with 6 or more ACEs

58% (17) students with no exposure to physical abuse or adult to adult violence

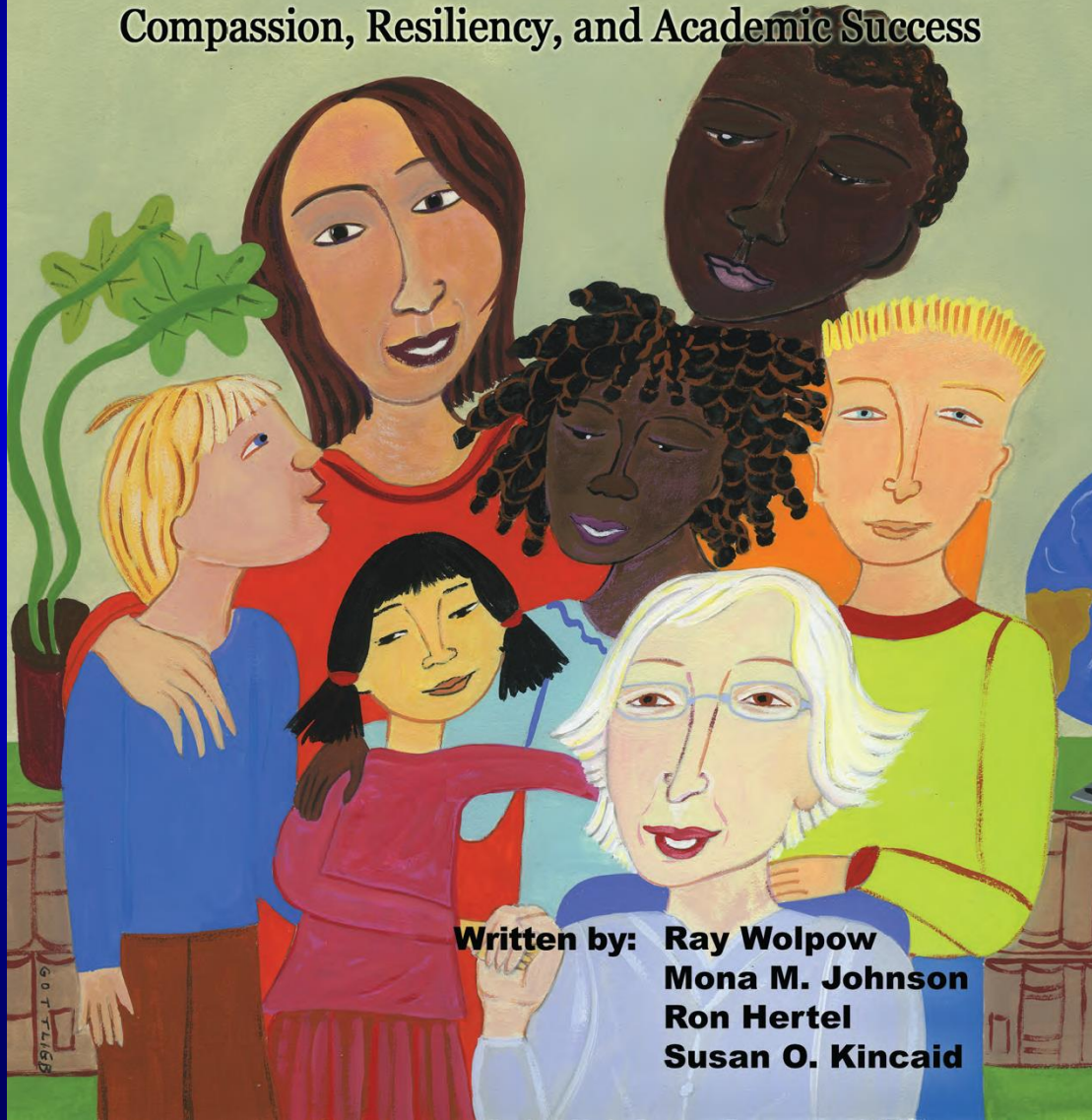
29% (9) of students exposed to physical abuse or adult to adult violence

13% (4) of students exposed to physical abuse and adult to adult violence



# The Heart of Learning and Teaching:

Compassion, Resiliency, and Academic Success



**Written by: Ray Wolpov  
Mona M. Johnson  
Ron Hertel  
Susan O. Kincaid**

# Compassionate Schools: The Six Principles

- Always Empower, Never Disempower
- Provide Unconditional Positive Regard
- Maintain Discipline and High Expectations
- Check Assumptions, Observe and Question - Listen
- Be a Relationship Coach
- Provide Guided Opportunities for Helpful Participation

# Health System Perceived Obstacles

- It's too big
- The damage is done
- Waiting for evidence
  - We need to do a study
- Waiting for grants
- Tackling a small piece of the puzzle

**It is not up to you to finish the work;  
neither are you permitted to refrain from it**

# Implications for care design

- Integrated care – is there an alternative?
- Motivational Interviewing
  - Collaborative
  - Tools
    - Listening
    - Affirmations
- Pediatric Collaborative
  - From medical to behavioral initiatives
  - Building on strengths

# Reflection on the task at hand

## Possibilities

- Doing as opposed to studying
- Combine evidenced based and sensible ideas
- Think people, think community.
- Think sustainable, within the present system.
- Work across systems, outside the health care silo.
- Think longitudinal, think long term.



# Learn More:

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

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

<http://acestoohigh.com/research/>

<http://www.cdc.gov/violenceprevention/cestudy/>

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

<http://www.readynation.org/brainscience/#.UA2RMfoO6wk.gmail>

<http://developingchild.harvard.edu/>

[www.HumaneExposures.com](http://www.HumaneExposures.com) – 3 important books

Medline/PubMed, Google - Anda/Felitti as author

Questions?

Discussion?

[Joshua.Gettinger@mahec.net](mailto:Joshua.Gettinger@mahec.net)

[Melissa.Baker@mahec.net](mailto:Melissa.Baker@mahec.net)



Newtonian physics, reductionist,  
mechanistic view of human body;  
determinant DNA



Quantum physics, holistic view of health;  
influence of social determinants of health;  
epigenetics; toxic stress; mind body  
connection