

DRAFT

THE HIGH COST OF ADVERSE CHILDHOOD EXPERIENCES



BRAIN RESEARCH

See for example: “Neurobiological and Behavioral Consequences of Exposure to Childhood Traumatic Stress,” *Stress in Health and Disease*, BB Arnetz and R Ekman (eds). 2006. Martin Teicher, Jacqueline Samson, Akemi Tomoda, Majed Ashy, and Susan Anderson

Teicher, M. “Scars that Won’t Heal: The Neurobiology of Child Abuse,” *Scientific American*, March, 2002, pp. 68-75.



EPIDEMIOLOGICAL RESEARCH

Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Koss MP, Marks JS. *American Journal of Preventive Medicine*. 1998 05 (Vol. 14, Issue 4)

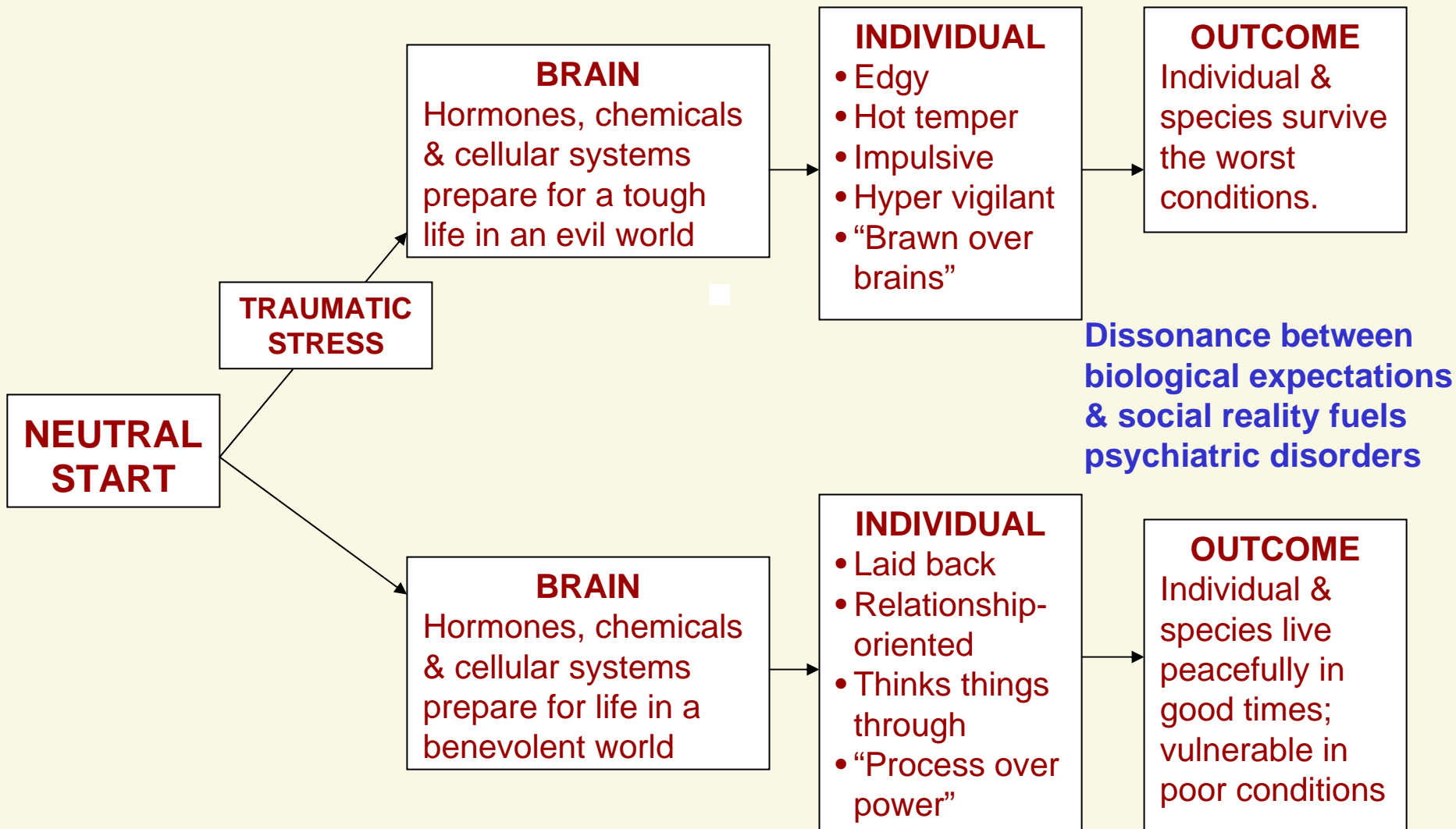
For a full list of publications, see <http://www.cdc.gov/nccdphp/ace/publications.htm>



To ensure the best match between the individual & the conditions he/she will face, the brain adapts to experience. Adaptation is fundamental to the brain's design.

BRAIN DEVELOPMENT PATTERNS

Adapted from the research of Martin Teicher, MD, Ph.D



DISCUSSION

- In your experience, how do our major social services, health, justice and/or education systems respond to kids who act on “brawn over brains”?
- How do these systems’ responses work for children and families?



BASIC BRAIN DEVELOPMENT & MALTREATMENT

Specialization of cells & brain regions

Stress hormones exert pressures on cells that alter growth & function.

Systems activated by hormones & other chemicals

Waves of stress hormones lead to premature activation of systems & make them more vulnerable to future stressors.

Myelination (coating of cells with fat to conduct electrical current)

Stress hormones prevent myelination, slowing brain activity.

Neurogenesis (cells)/Synaptogenesis (synapses)

Granule or “seedling” cells are destroyed & fail to grow. New synapses fail to emerge, reducing overall brain mass at maturity.

Receptors

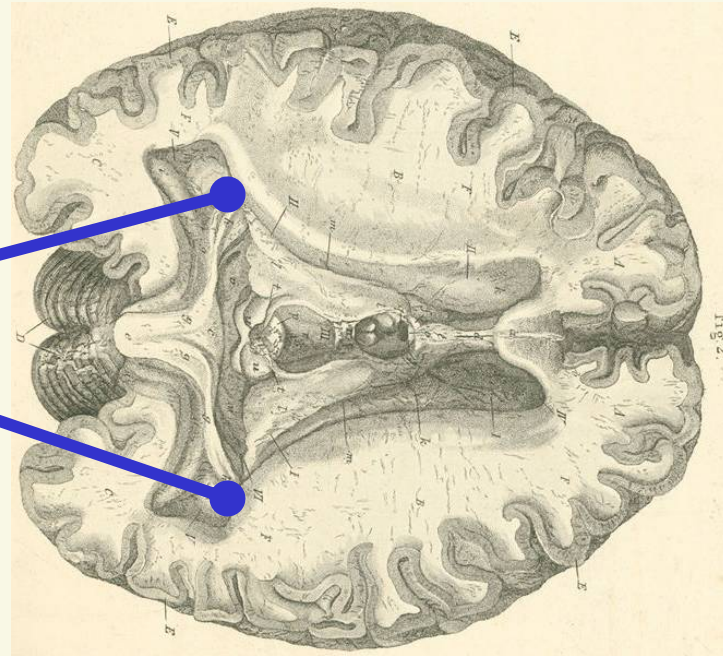
Receptors for neurochemicals fail to mature fully.

GENERAL EFFECTS OF ABUSE & NEGLECT

EARLY CHILDHOOD Hippocampus

RESULTS:

- Emotionally reactive
- Poor regulation of behavior
- Difficulty with verbal & spatial memory

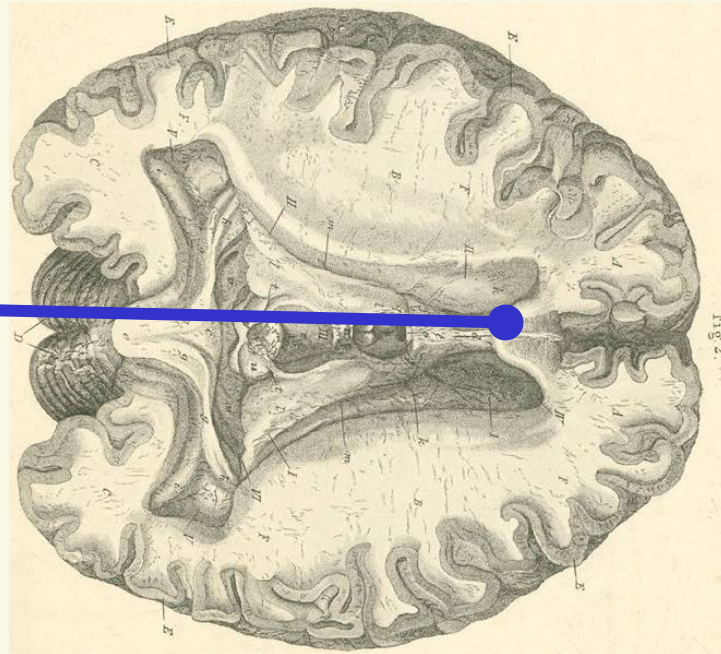


GENERAL EFFECTS OF ABUSE & NEGLECT

MIDDLE CHILDHOOD Corpus Callosum

RESULTS:

- Language delay
- Diminished integration & coordination
- Vulnerability to PTSD

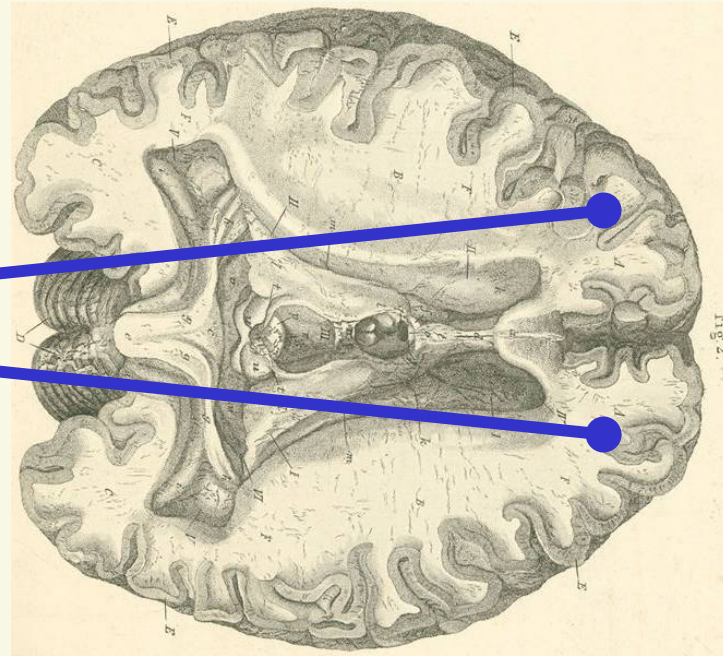


GENERAL EFFECTS OF ABUSE & NEGLECT

ADOLESCENCE Pre-Frontal Lobes

RESULTS:

- Poor executive function
- Impulsiveness
- Diminished abstract reasoning
- Bleak perspective; no hope for the future



POTENTIAL CONSEQUENCES

COGNITIVE

- Slowed language development
- Attention problems (ADD/ADHD)
- Speech delay
- Poor verbal memory/recall
- Loss of brain matter/IQ

SOCIAL

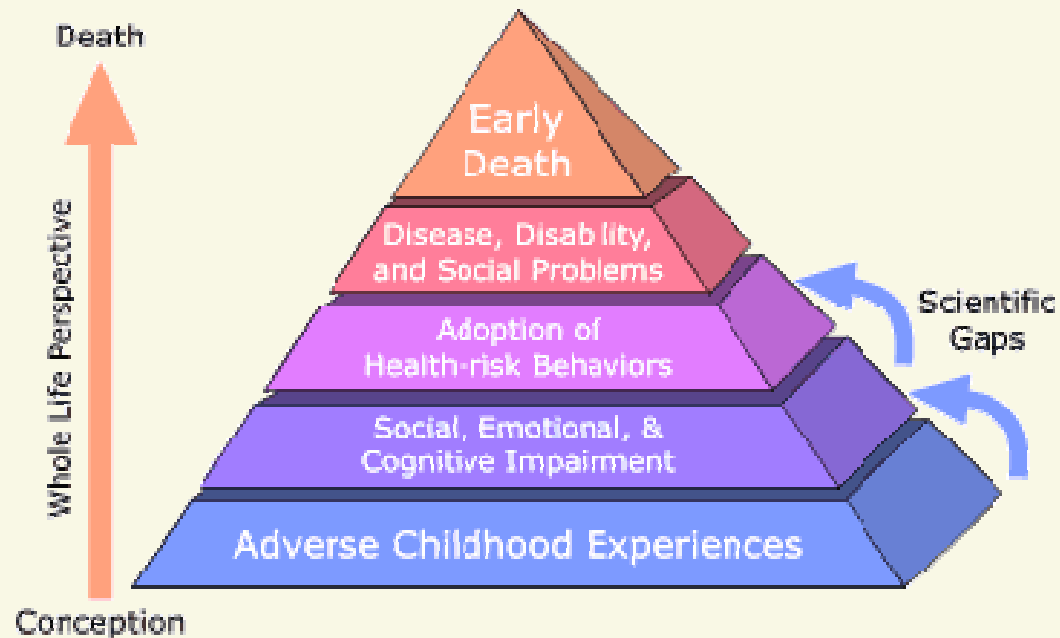
- Aggression & violent outbursts
- Poor self-control of emotion
- Can't modify behavior in response to social cues
- Social isolation—can't navigate friendship

MENTAL HEALTH

- Poor social/emotional development
- Alcohol, tobacco & other drug abuse—vulnerable to early initiation
- Adolescent & adult mental health disorders—especially depression, suicide, dissociative disorder, borderline personality disorder, PTSD



INTEGRATING BRAIN & EPIDEMIOLOGICAL RESEARCH

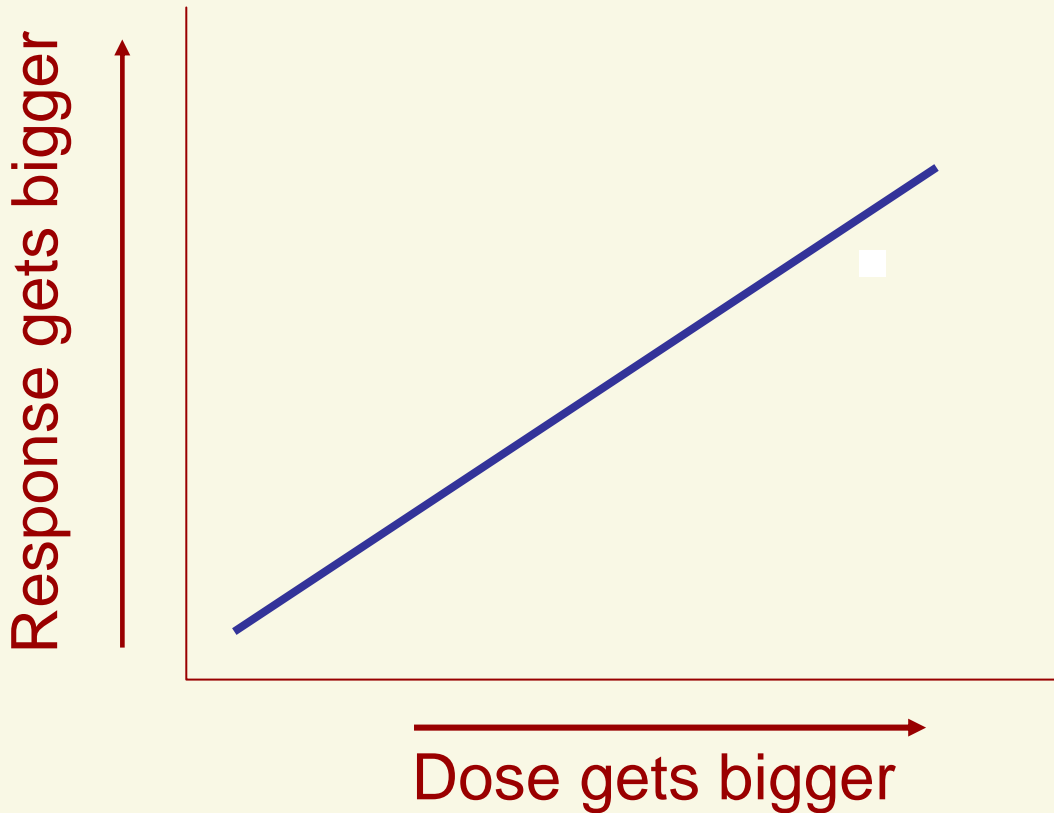


WHAT ARE THE ADVERSE CHILDHOOD EXPERIENCES (ACEs)?

1. Child physical abuse
2. Child sexual abuse
3. Child emotional abuse
4. Neglect
5. Mentally ill, depressed or suicidal person in the home
6. Drug addicted or alcoholic family member
7. Witnessing domestic violence against the mother
8. Loss of a parent to death or abandonment, including abandonment by divorce
9. Incarceration of any family member



A CLASSIC CAUSAL RELATIONSHIP MORE ACEs = MORE HEALTH PROBLEMS



Dose-response is a direct measure of cause & effect.

The “response”—in this case the occurrence of the health condition—is caused directly by the size of the “dose”—in this case, the number of ACEs.

LIFE LONG PHYSICAL, MENTAL & BEHAVIORAL OUTCOMES OF ACEs

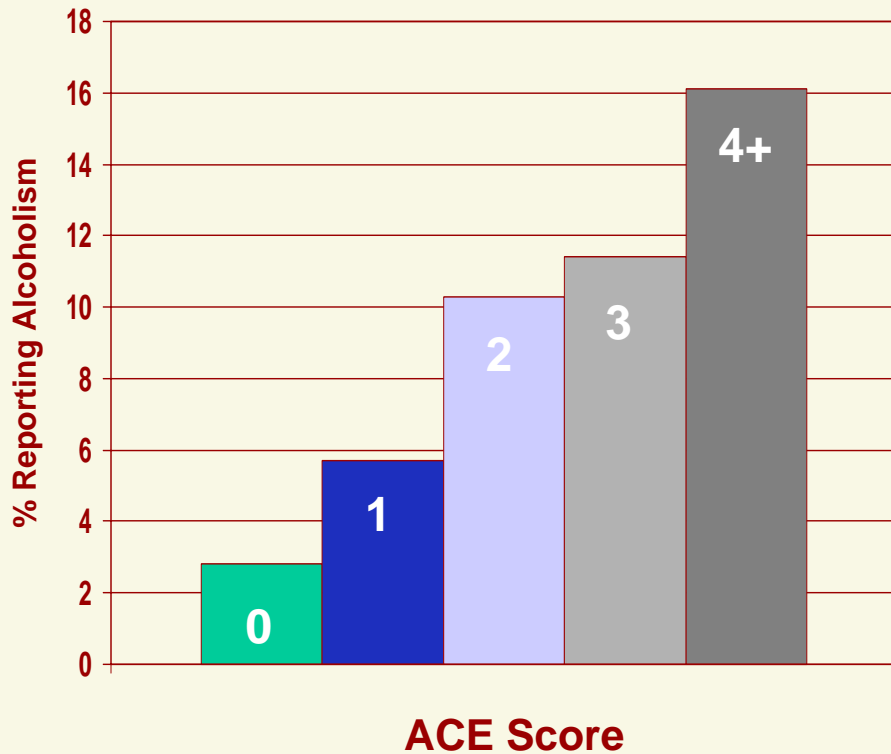
- Alcoholism & alcohol abuse
- Chronic obstructive pulmonary disease & ischemic heart disease
- Depression
- Fetal death
- High risk sexual activity
- Illicit drug use
- Intimate partner violence
- Liver disease
- Obesity
- Sexually transmitted disease
- Smoking
- Suicide attempts
- Unintended pregnancy



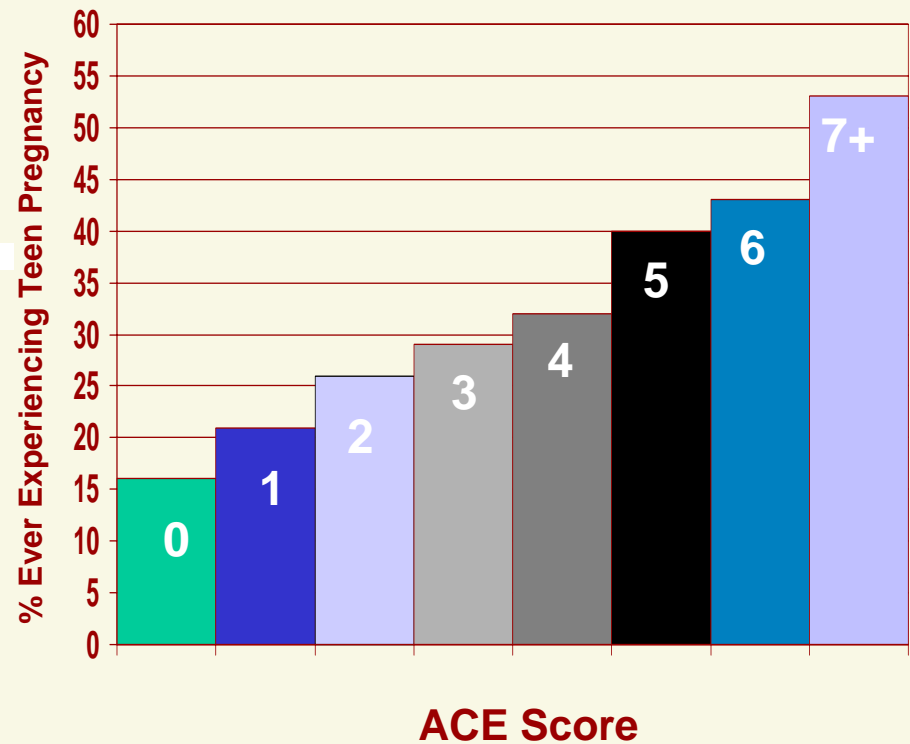
The higher the ACE Score, the greater the incidence of co-occurring conditions from this list.

ACE STUDY DOSE-RESPONSE FINDINGS

Adult Alcoholism

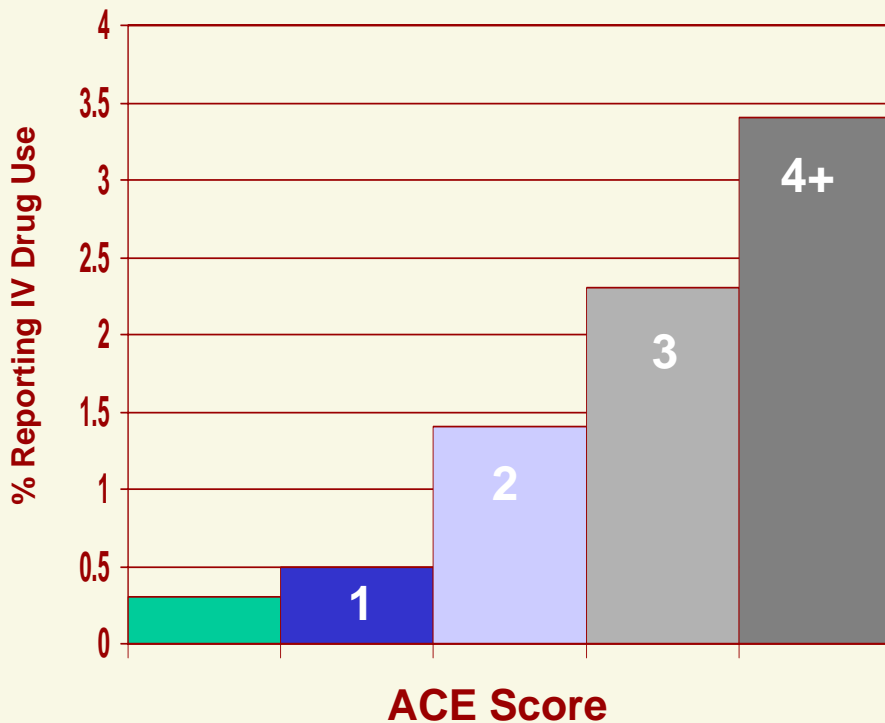


Women & Teen Pregnancy

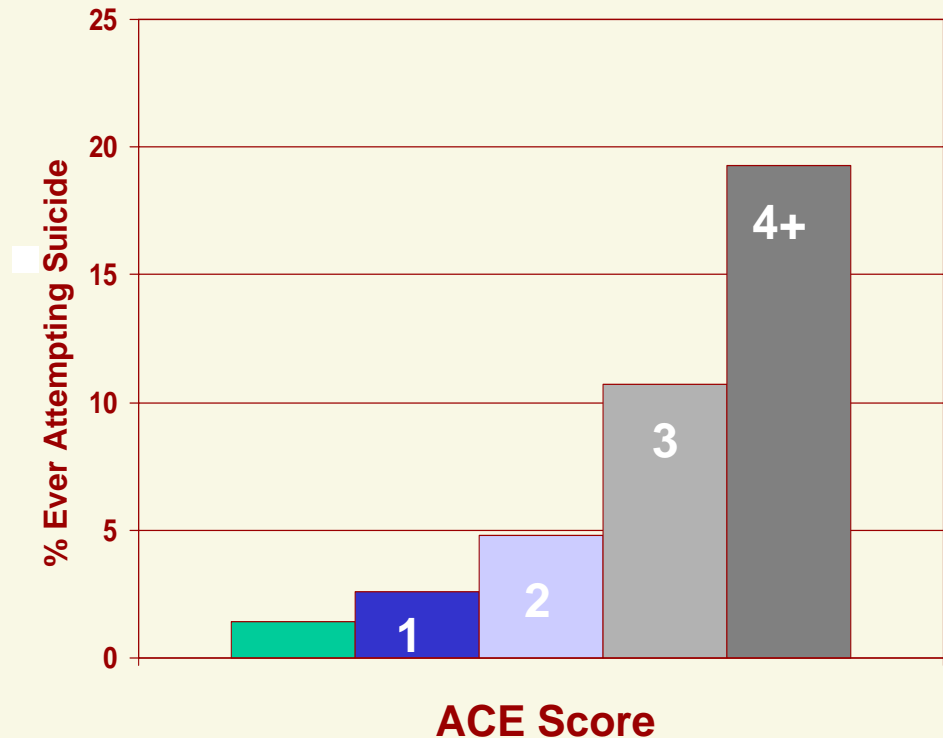


ACE STUDY DOSE RESPONSE FINDINGS

Intravenous Drug Use



Attempted Suicide



PROBABILITY OF SAMPLE OUTCOMES GIVEN 1,000 AMERICAN ADULTS

330

Report No ACEs



WITH 0 ACEs

1 in 16 smokes

1 in 69 are alcoholic

1 in 480 uses IV drugs

1 in 14 has heart disease

1 in 96 attempts suicide

510

Report 1-3 ACES



WITH 3 ACEs

1 in 9 smokes

1 in 9 are alcoholic

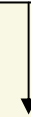
1 in 43 uses IV drugs

1 in 7 has heart disease

1 in 10 attempts suicide

160

Report 4-8 ACEs



WITH 7+ ACEs

1 in 6 smokes

1 in 6 are alcoholic

1 in 30 use IV drugs

1 in 6 has heart disease

1 in 5 attempts suicide

DISCUSSION

- The ACE findings can sometimes challenge our beliefs about how substance abuse, depression and other health problems come to be. In what ways does this information challenge you?
- In what ways does this study affirm your experience and/or professional understanding of mental, physical & behavioral health outcomes?

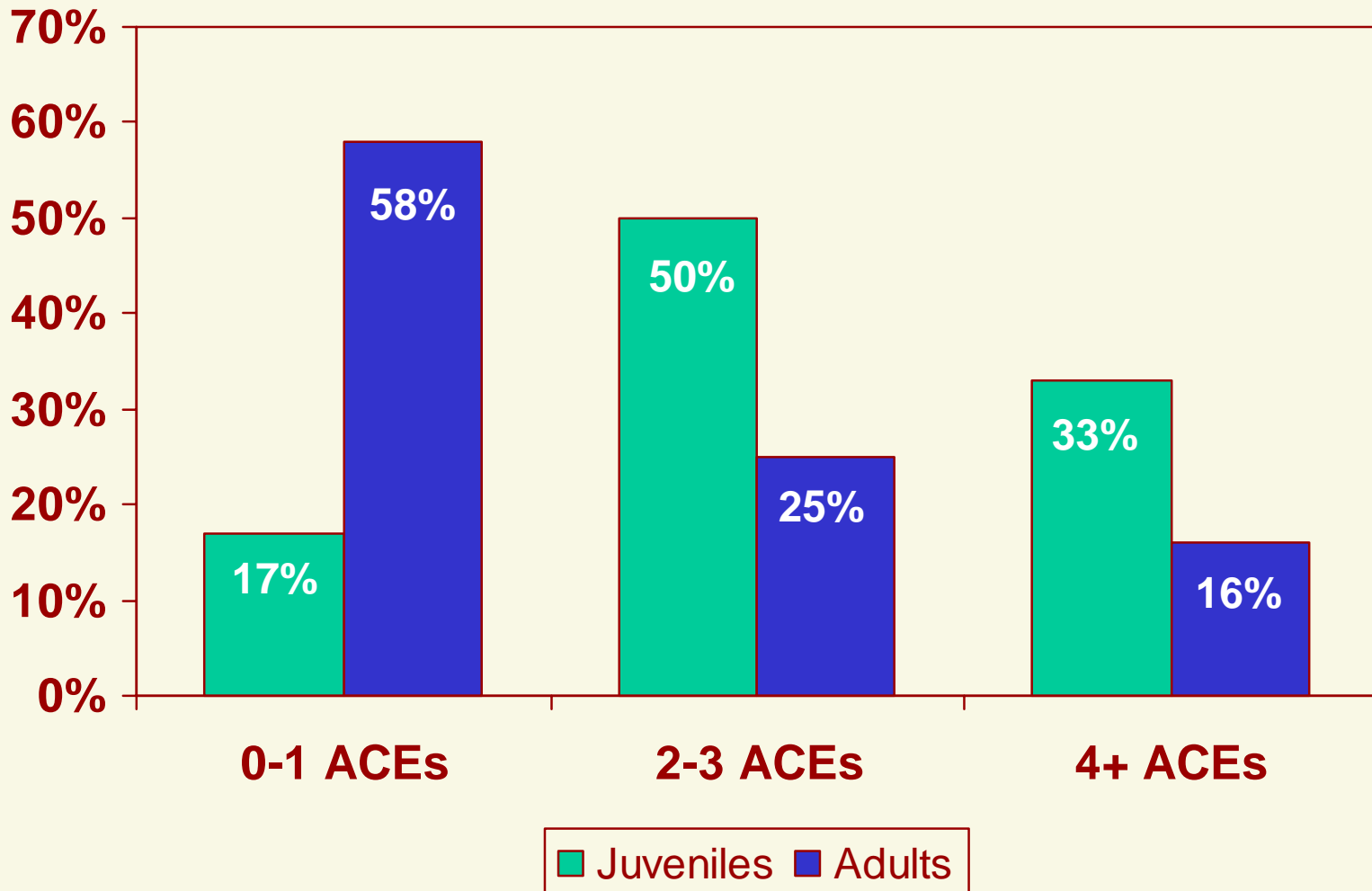


PIERCE COUNTY JUVENILE COURT IMPROVEMENT PROJECT:

*A CASE STUDY OF THE ROLE OF
ACEs IN COSTLY SOCIAL PROBLEMS*



PREVALENCE of ACEs COURT INVOLVED YOUTH vs. ADULTS ENROLLED IN AN HMO

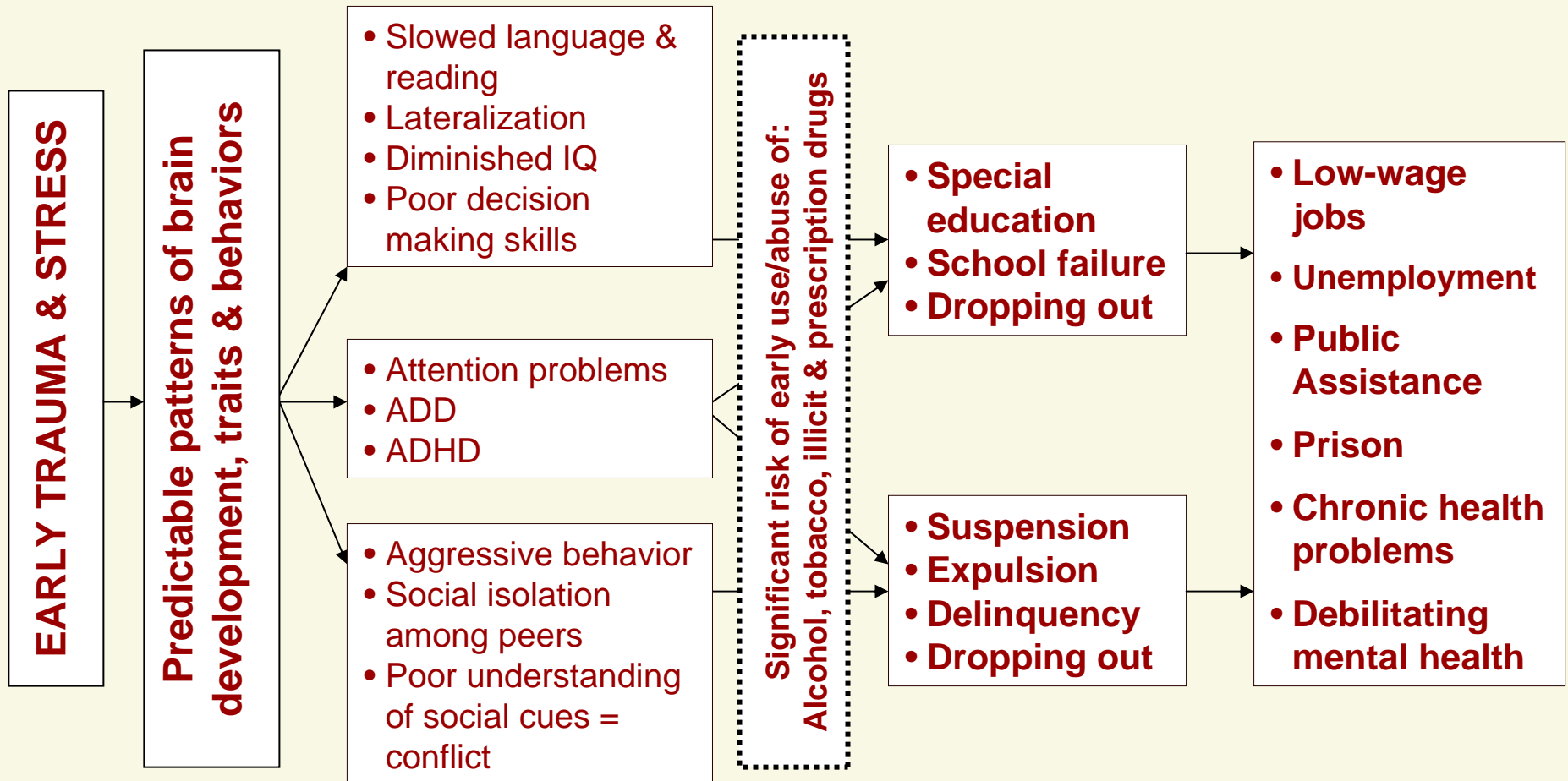


DISCUSSION

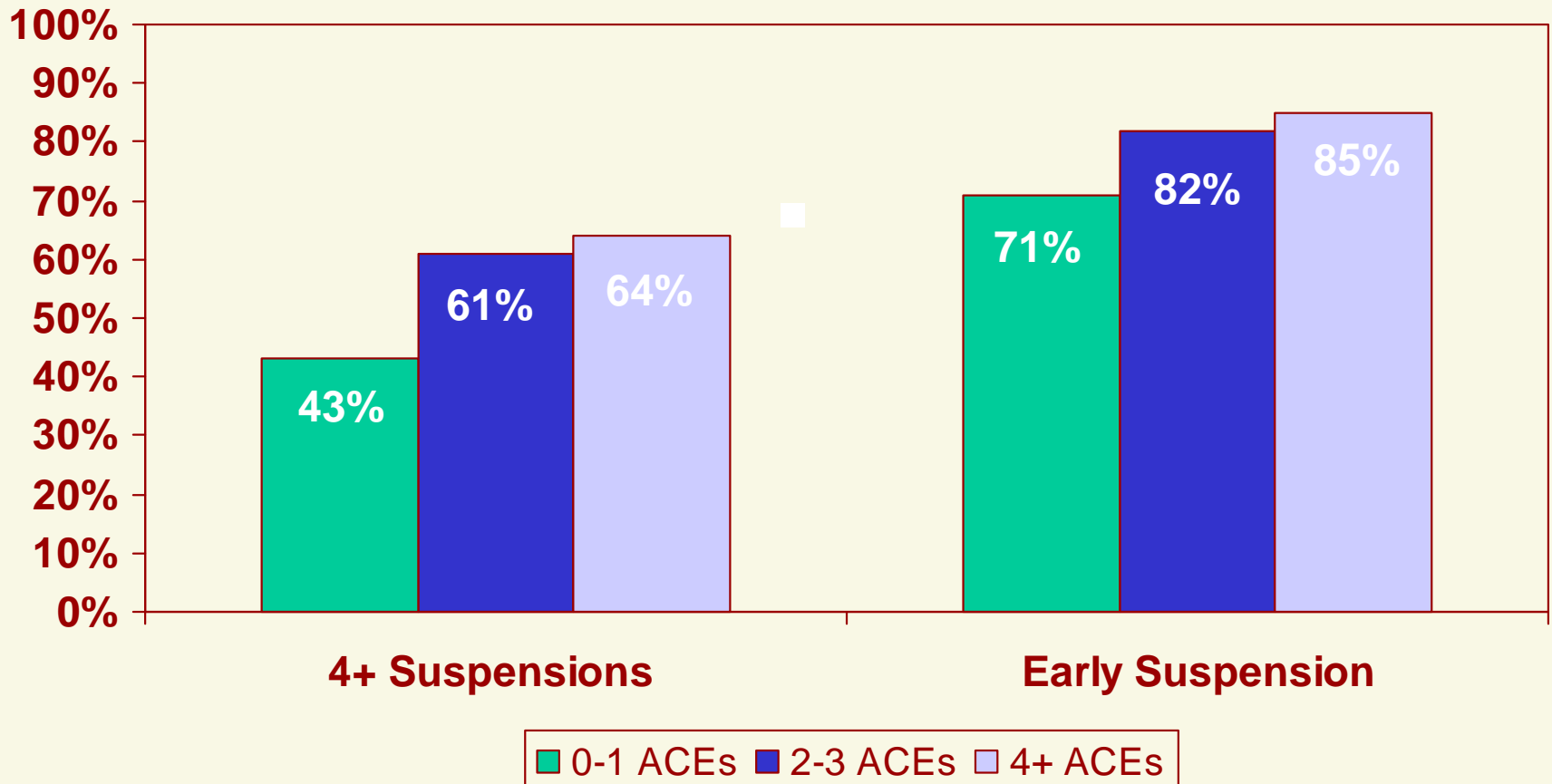
- Given that the youth represented in this graph are both court-involved and have a significant number of adverse childhood experiences, what else would expect to be true about their lives?



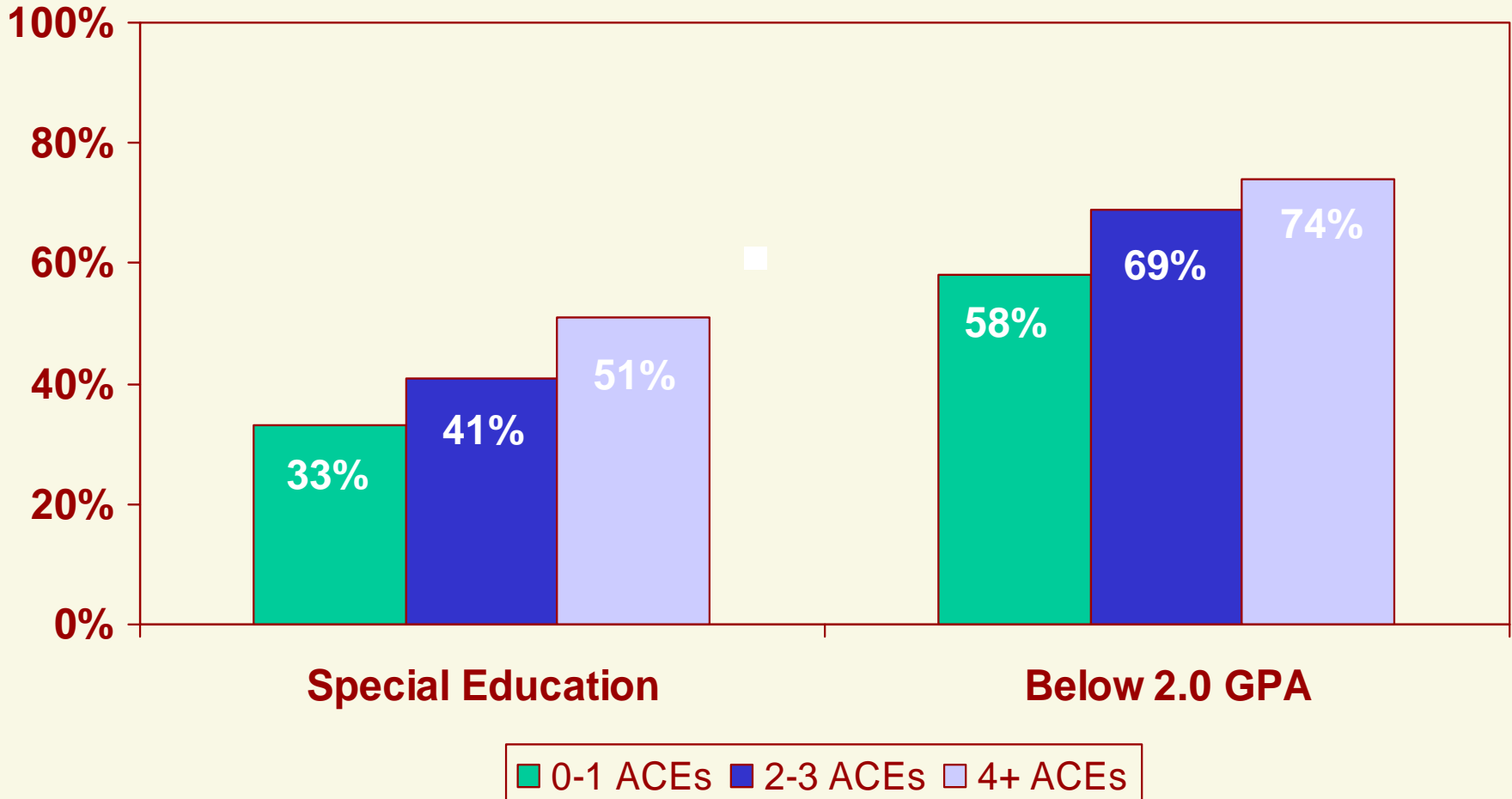
THE FAST TRACK TO POVERTY



JUVENILE OFFENDERS: ACES & SCHOOL EXPERIENCE



JUVENILE OFFENDERS: ACES & SCHOOL EXPERIENCE



SOME CONVERSATION STARTERS

- What implications might these findings have for community action?
- What else might you like to know about court involved youth, ACEs and other life experiences? Why?
- Who would you like to be conversing with about this information? Why?





Washington State FAMILY POLICY COUNCIL

A Family, Community, State Partnership
Families Thrive With Us

www.fpc.wa.gov

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THANKS FOR LISTENING

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