



THE LIFE JOURNEY

Impacts of Trauma



Adverse Childhood Experiences (ACEs)

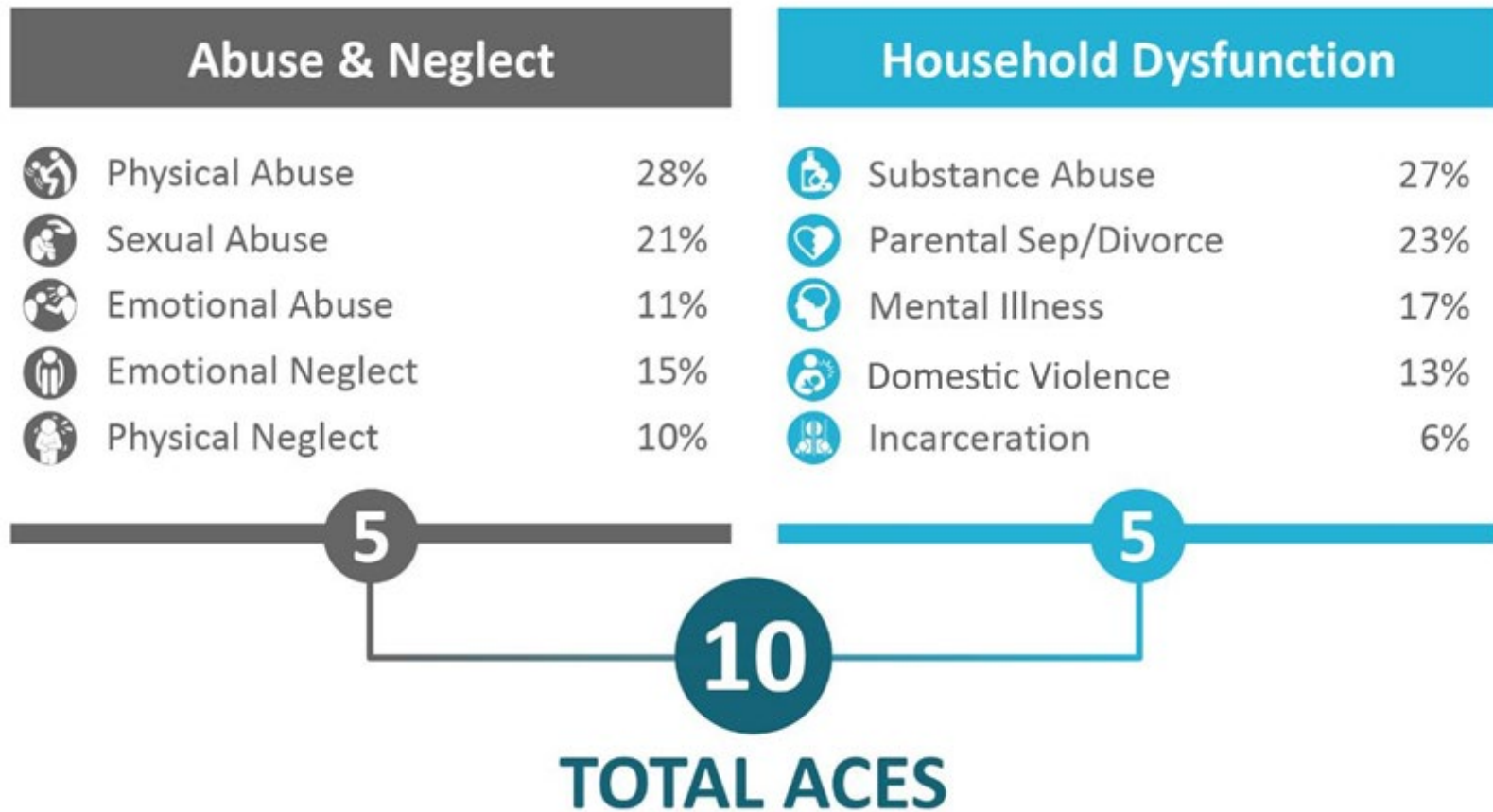


KAISER PERMANENTE

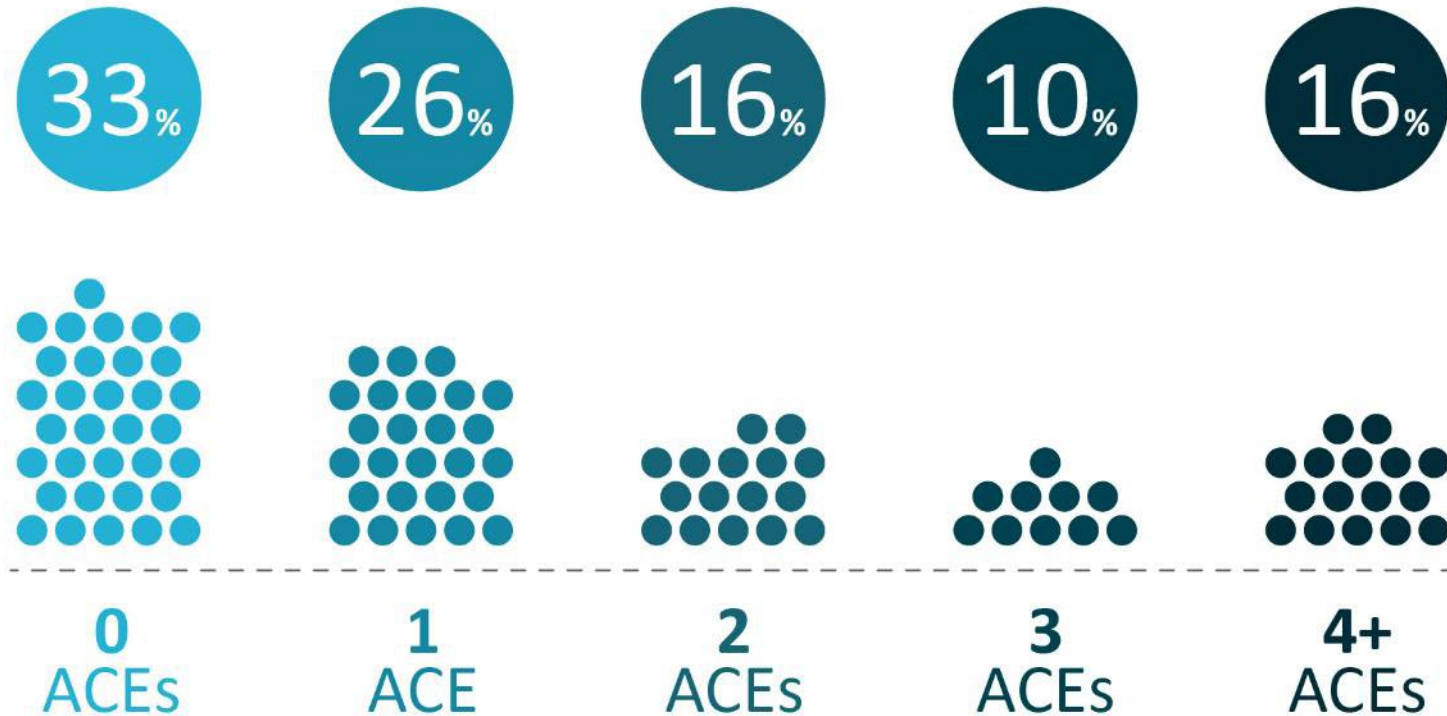
**Study based on
17,000 patients in
San Diego, CA**

Photo by Ted Eytan, CC

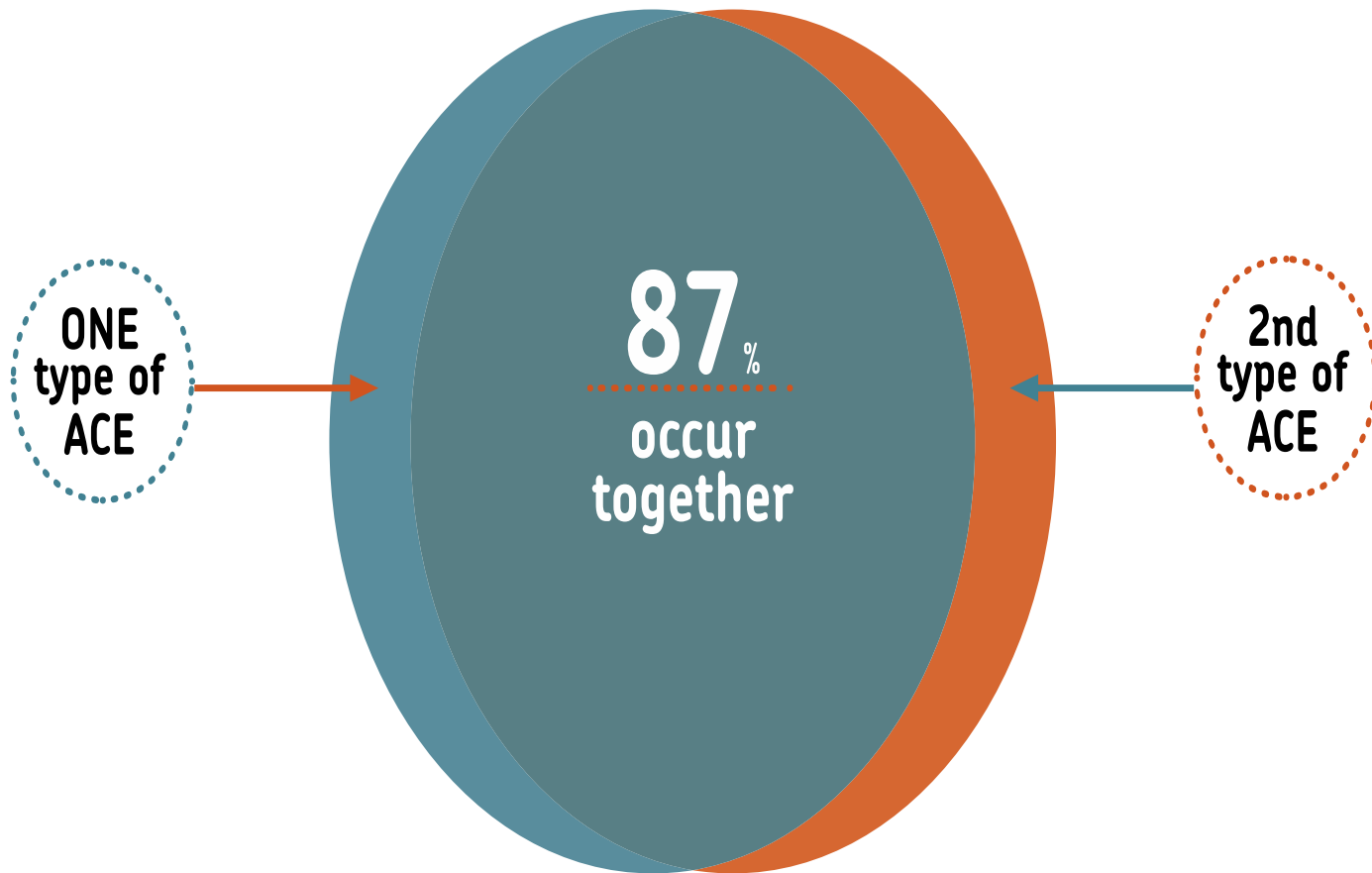
ACEs Are Common



ACE Score = Number of ACE Categories



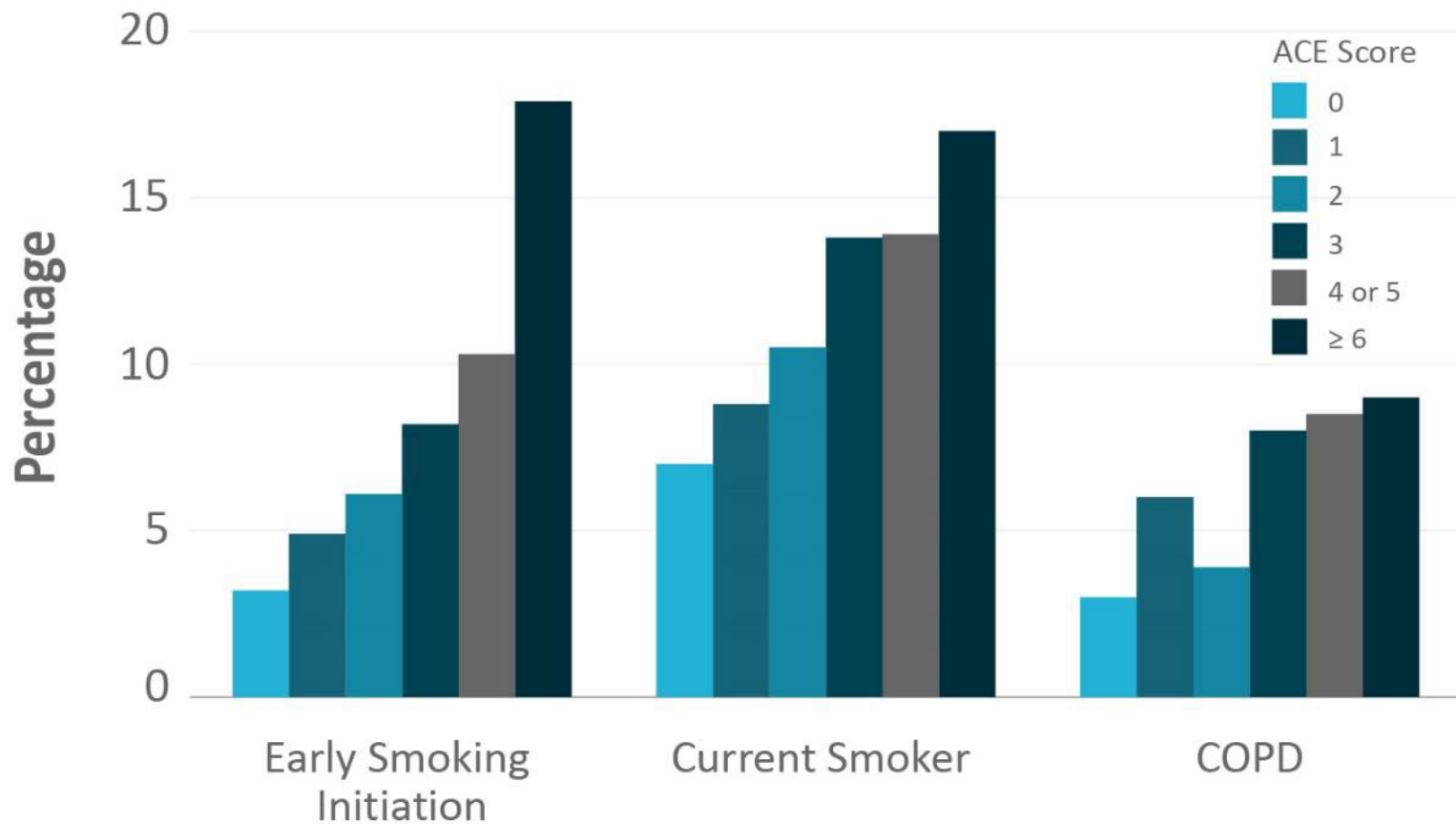
Where One ACE Occurs, There are Usually Others



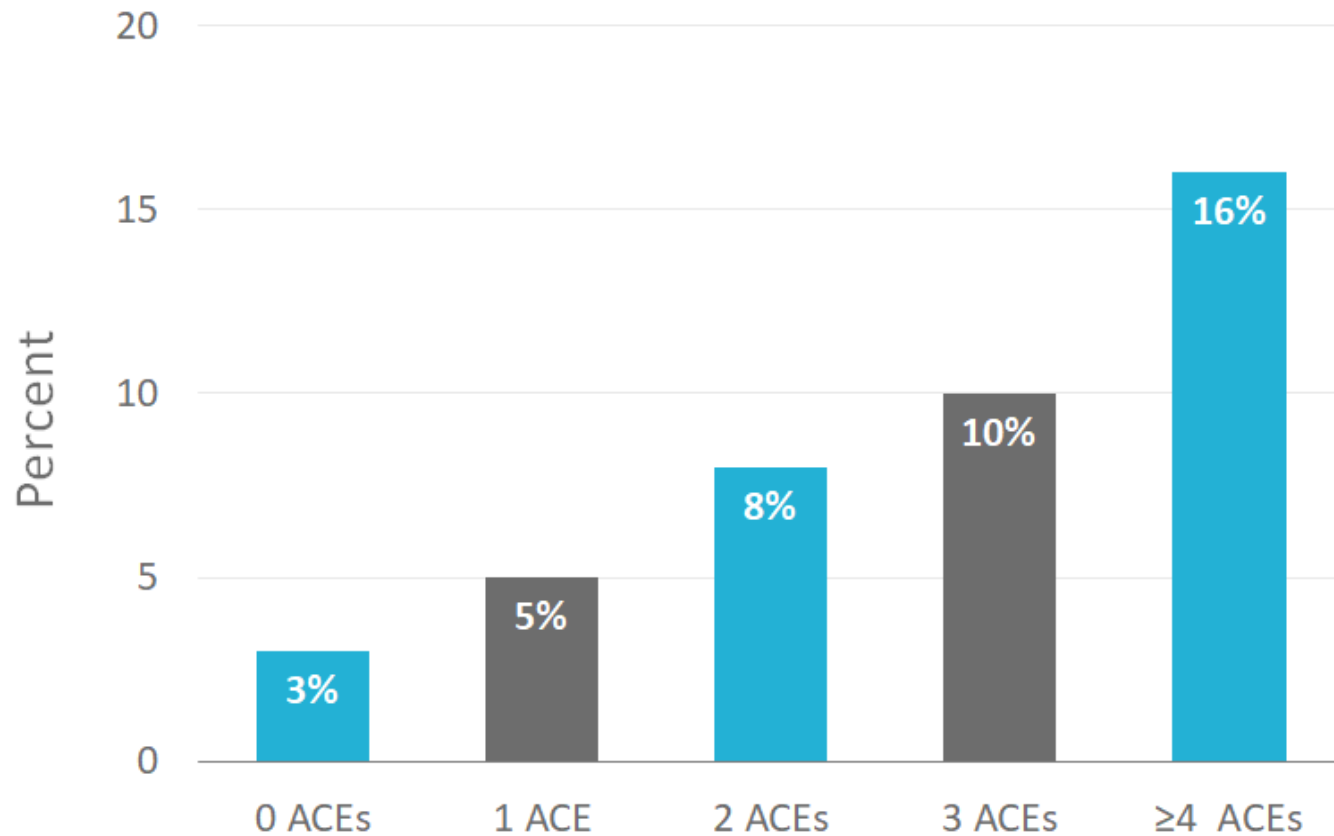
ACEs & Health Problems



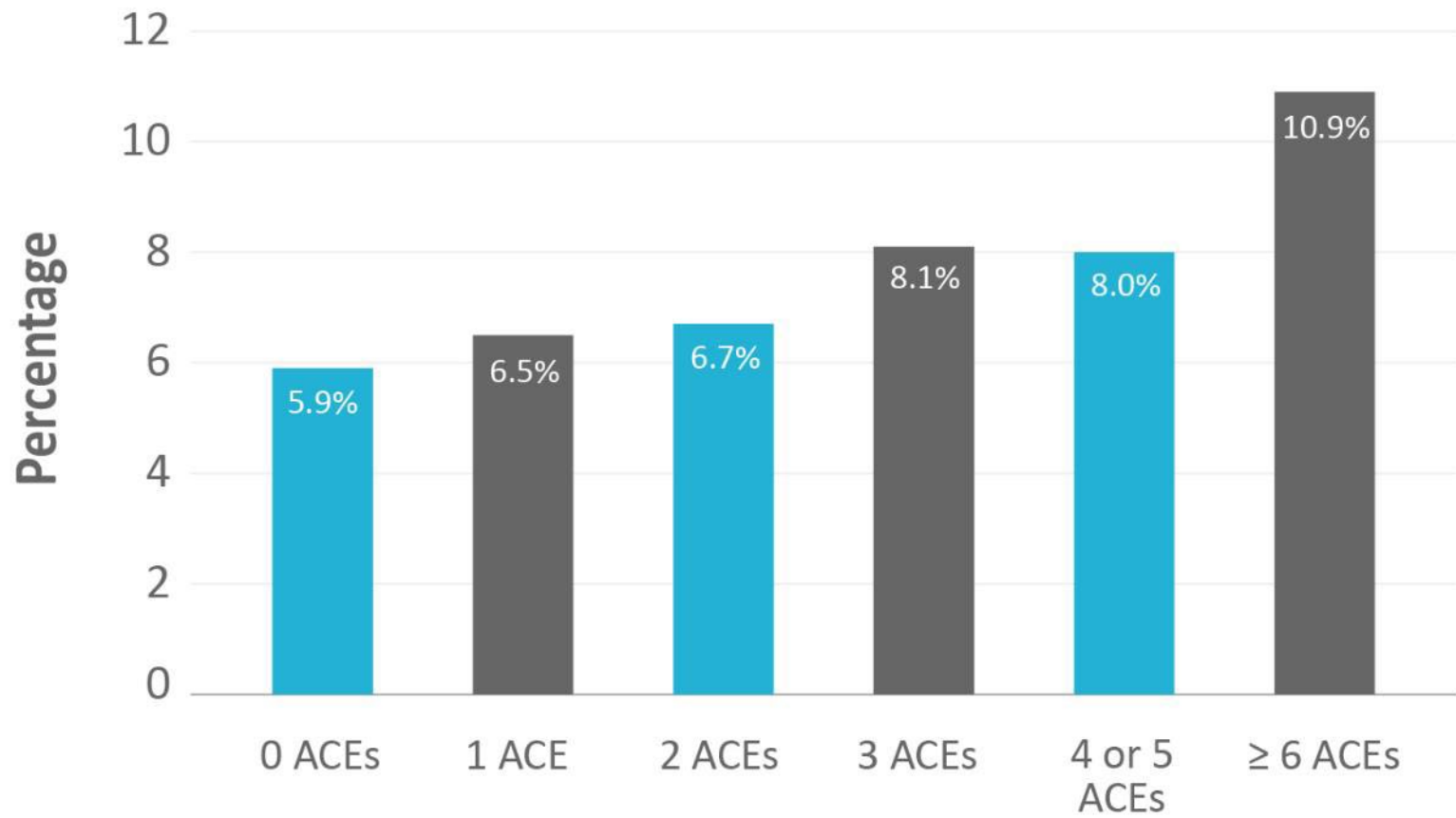
ACES & Smoking



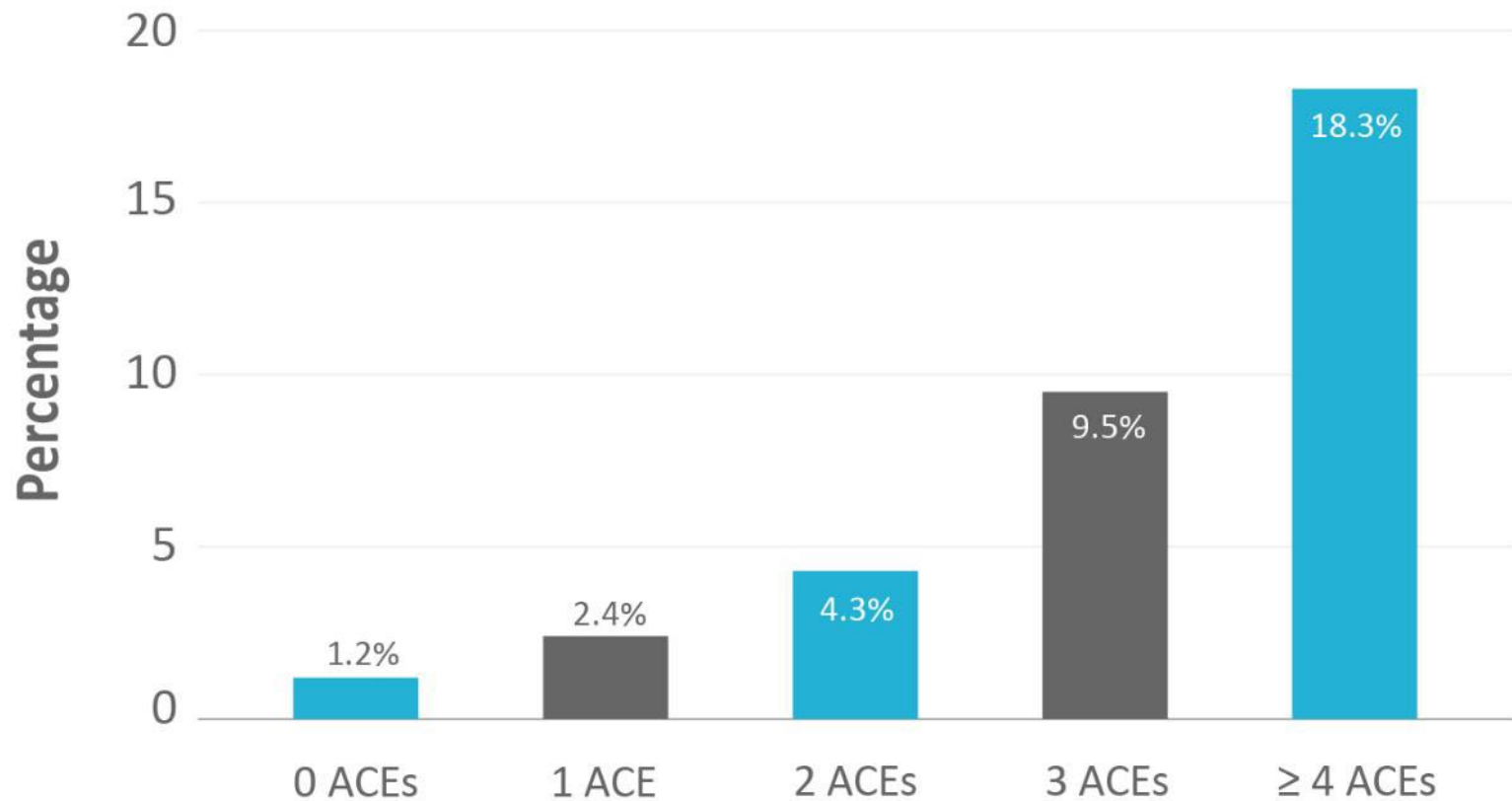
ACEs & Alcoholism



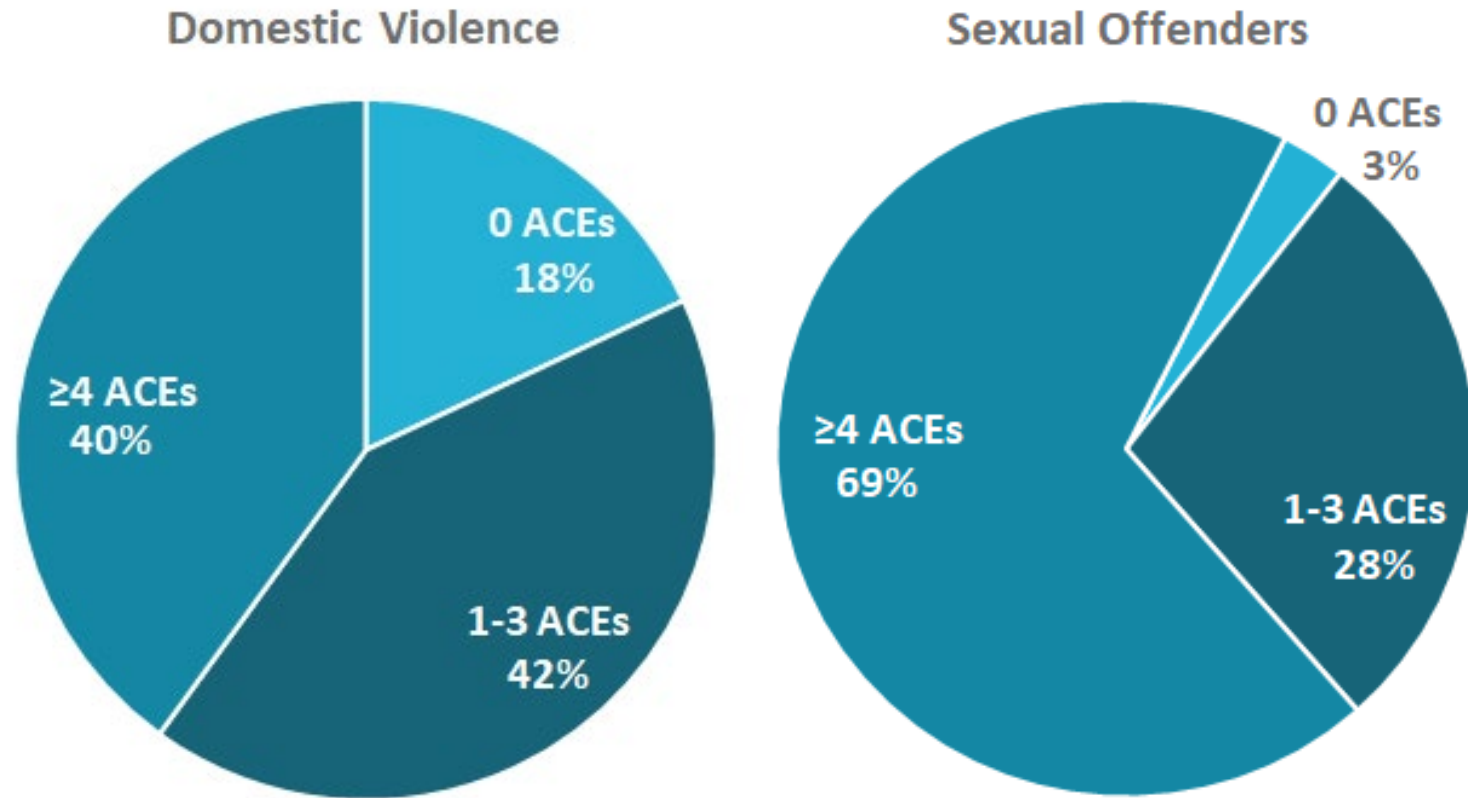
ACEs & Liver Disease



ACEs & Suicide Attempts



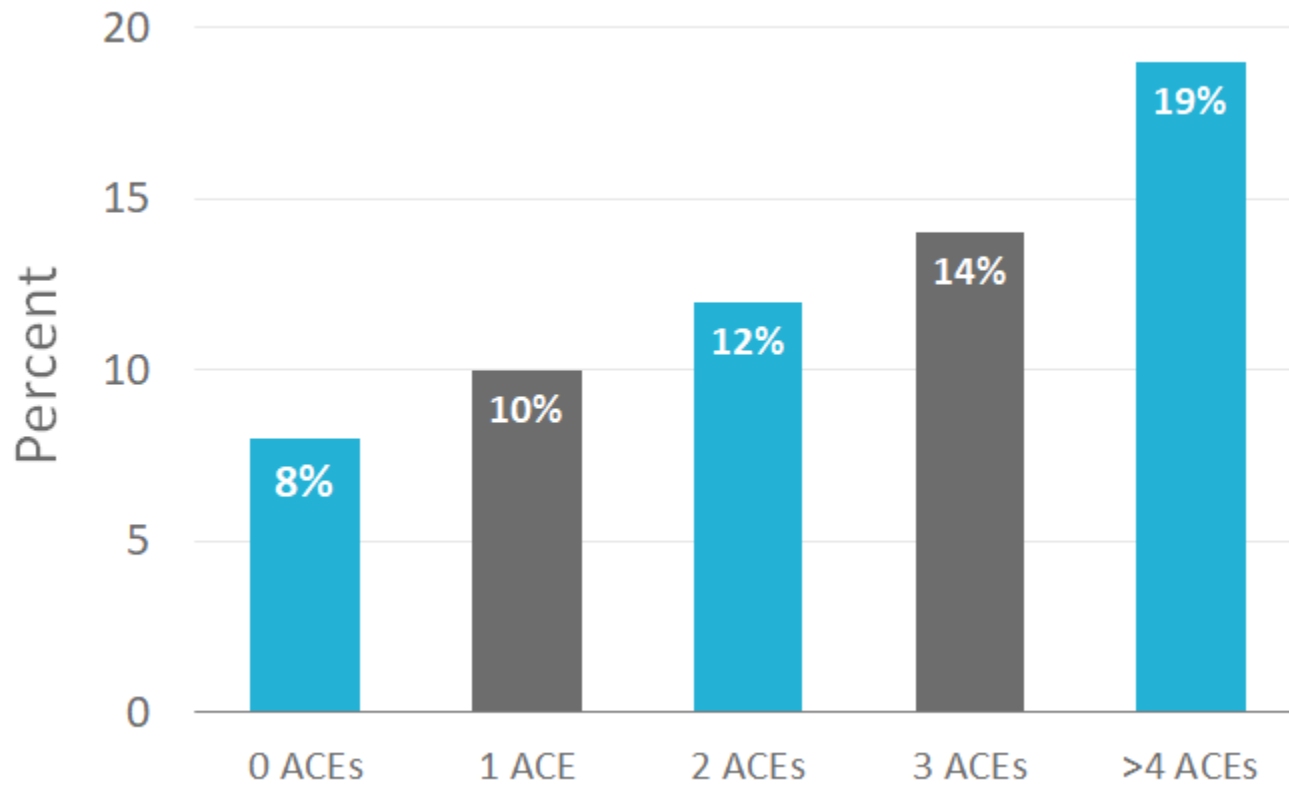
Perpetrating DV/SV is associated with high ACE scores



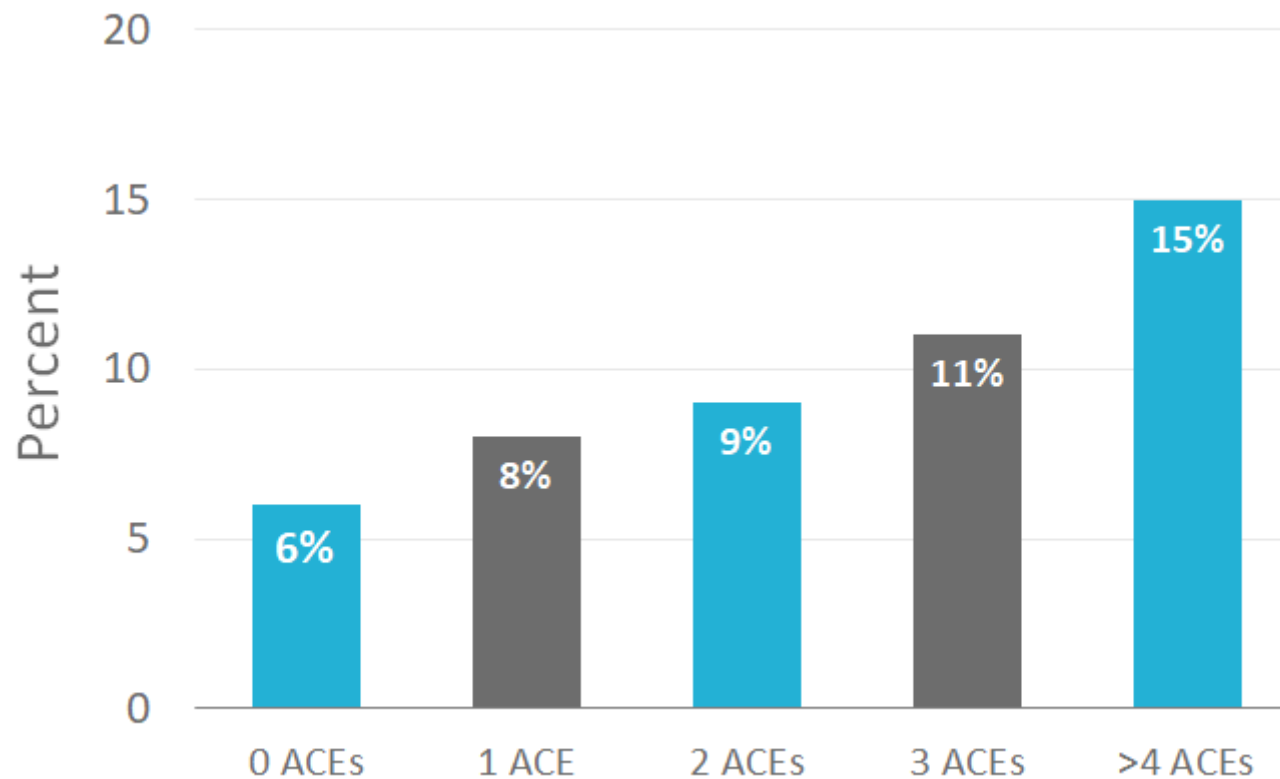
Boys w/
an ACE
score of
6+ are

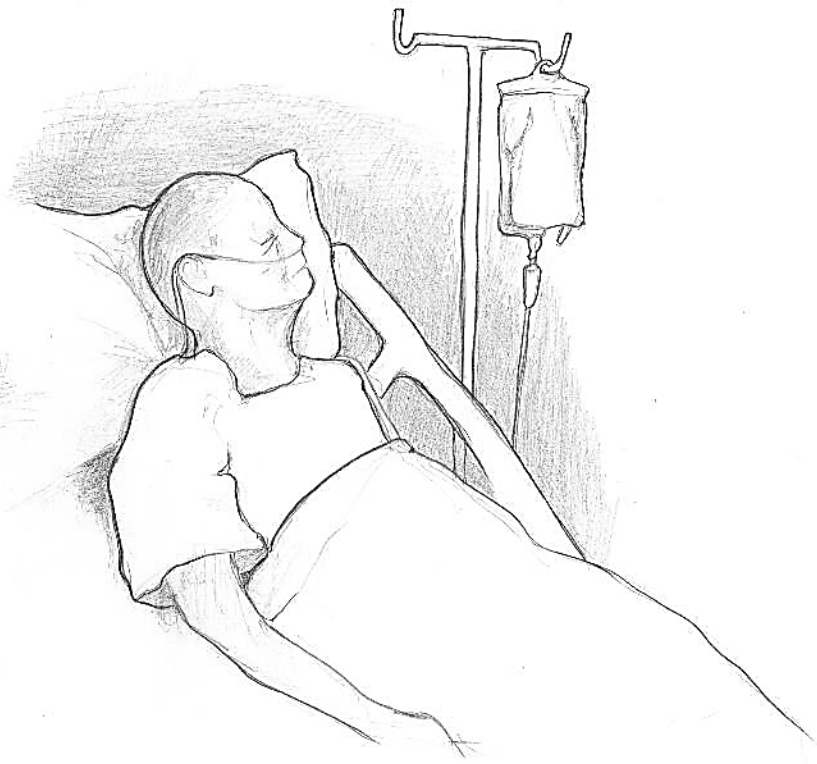
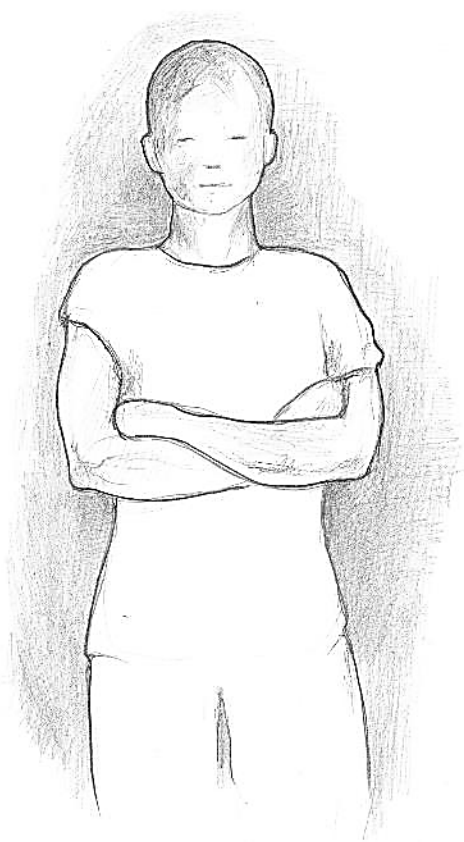
46x
as likely
to use IV
drugs

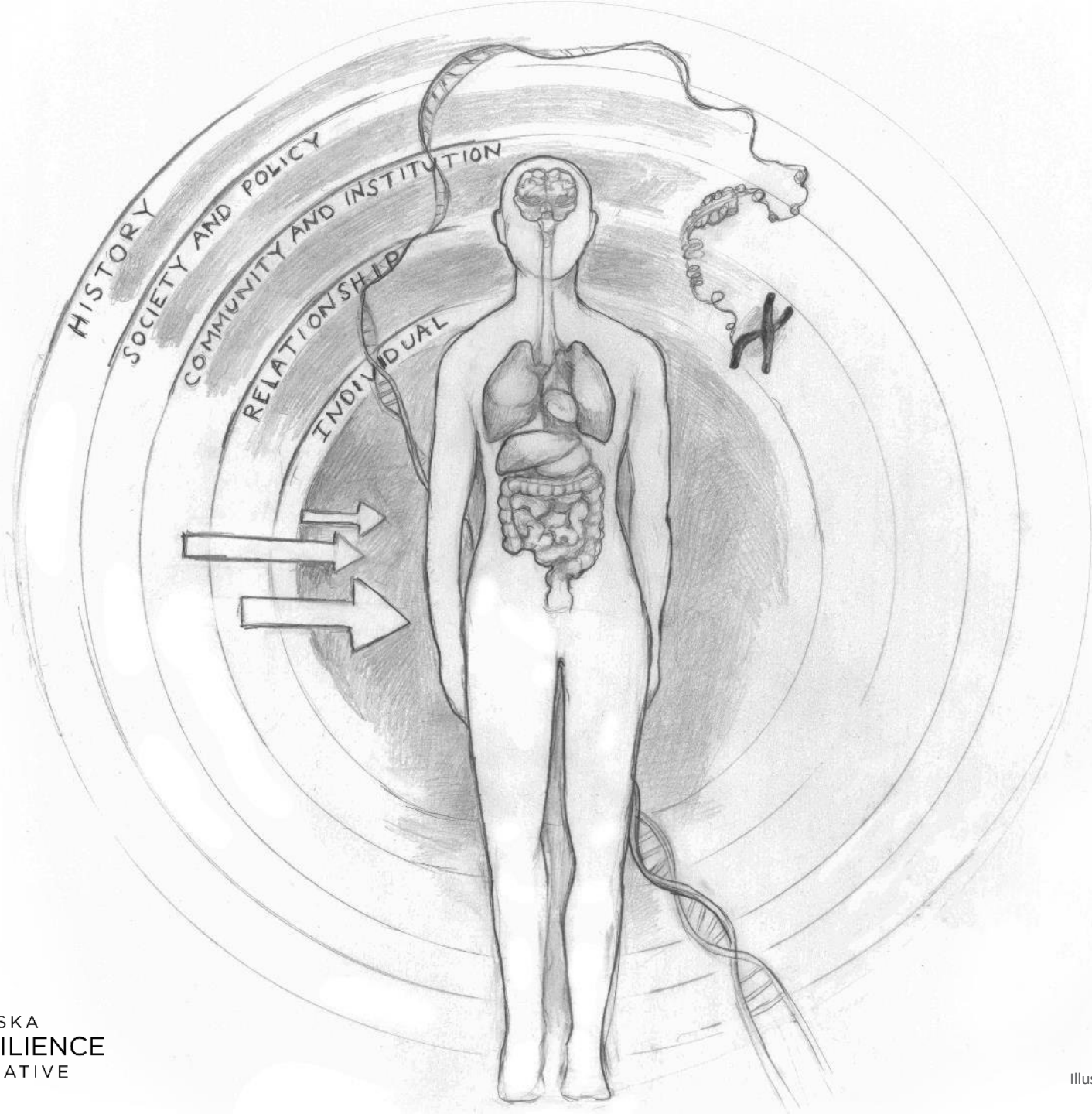
ACEs contribute to serious job problems



ACEs Contribute to Absenteeism







Jared Parrish, PhD



ABUSE



Physical

18.6%



Emotional

39.1%



Sexual

15.8%

Individual ACES are common among Alaska Adults.

The top 3 individual ACES reported include:

- 1) Experiencing emotional abuse
- 2) Substance misuse by an adult in the home
- 3) Divorce of a parent

HOUSEHOLD CHALLENGES



Parent Treated Violently

18.7%



Substance Misuse

34.1%



Mental Illness

21.5%



Incarcerated Relative

11.4%

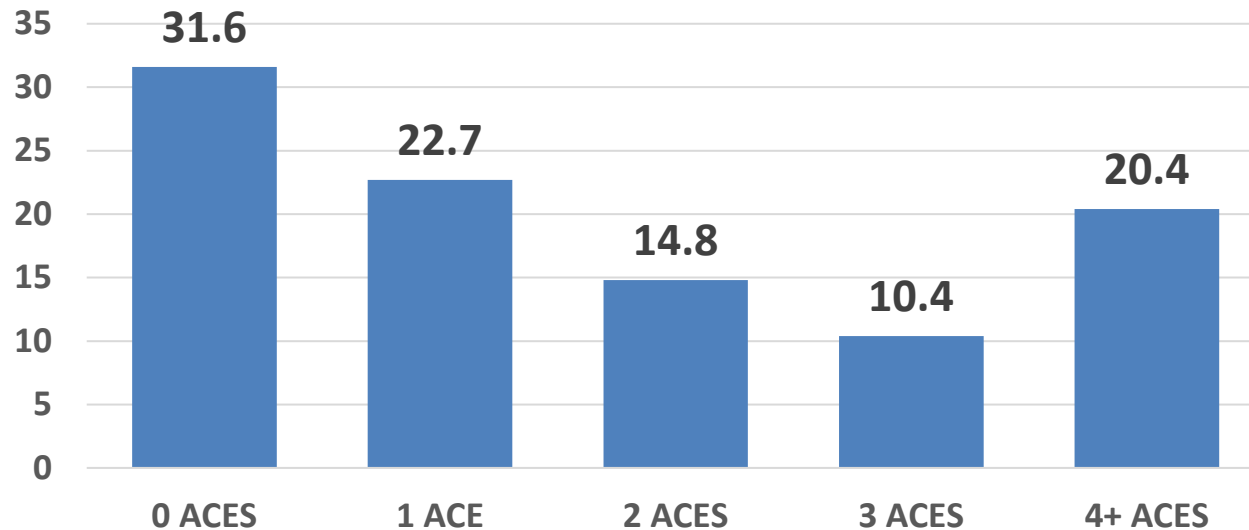


Divorce

31.7%

Source: Alaska data from the 2013-2015, Alaska Behavioral Risk Factor Surveillance System, Alaska Department of Health, Division of Public Health, Section of Chronic Disease Prevention and Health Promotion

Percent of Alaska Adults reporting accumulated ACES



68.4% of Alaska Adults reported experiencing at least 1 ACE

For more info on ACEs in Alaska visit:
<https://health.alaska.gov/abada/ace-ak/documents/acesreportalaska.pdf>

Source: Alaska data from the 2013-2015, Alaska Behavioral Risk Factor Surveillance System, Alaska Department of Health, Division of Public Health, Section of Chronic Disease Prevention and Health Promotion

ALCANLink

Alaska Longitudinal Child Abuse and Neglect Linkage Project

A population-based mixed design



1 per 6
sampled



2009 – 2018
(3 cohorts)

Linked

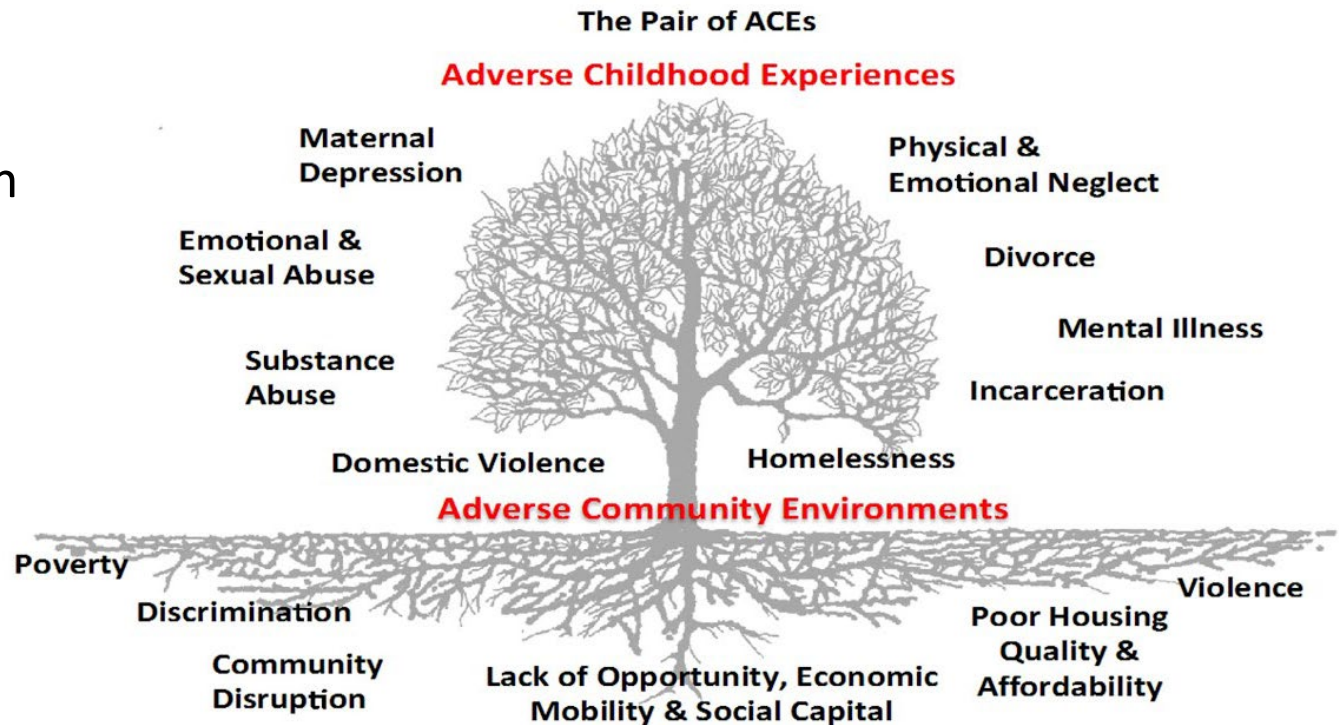


3 – Year
Follow – Up

Annual

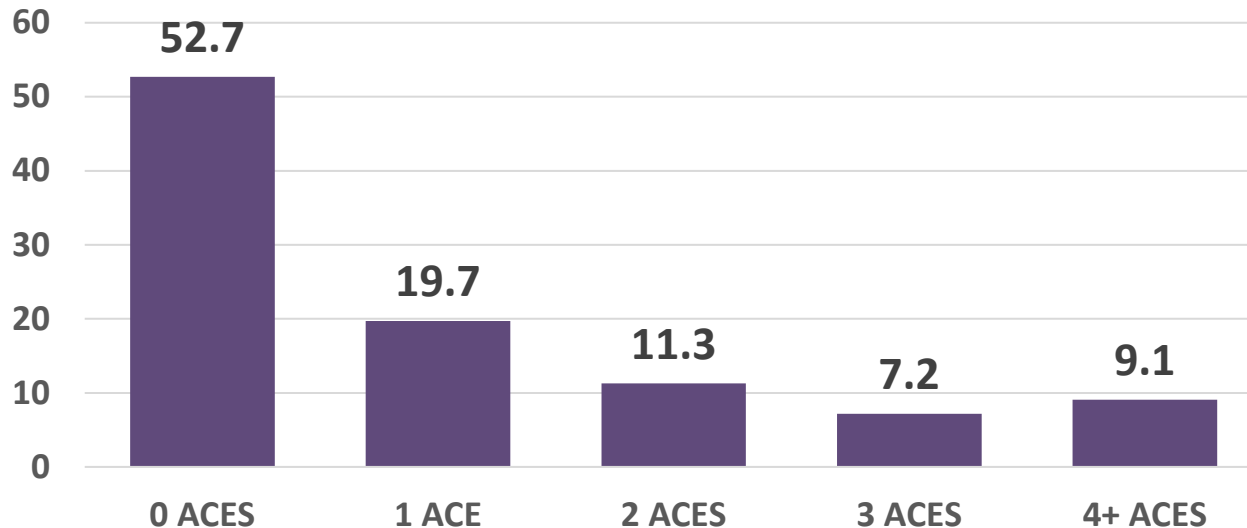
- ❖ Permanent Fund
- ❖ Office of Children's Services
- ❖ Medicaid
- ❖ Dept. of Education & Early Development
- ❖ Birth/Death Records

Original ACES have been expanded to measure other adversities that can lead to trauma



Ellis, W., Dietz, W. (2017) A New Framework for Addressing Adverse Childhood and Community Experiences: The Building Community Resilience (BCR) Model. *Academic Pediatrics*. 17 (2017) pp. S86-S93. DOI information: 10.1016/j.acap.2016.12.011

Percent of Alaska 3-year-olds experiencing accumulated ACES



47.3% of Alaska 3-year-old children have experienced at least 1 ACE.

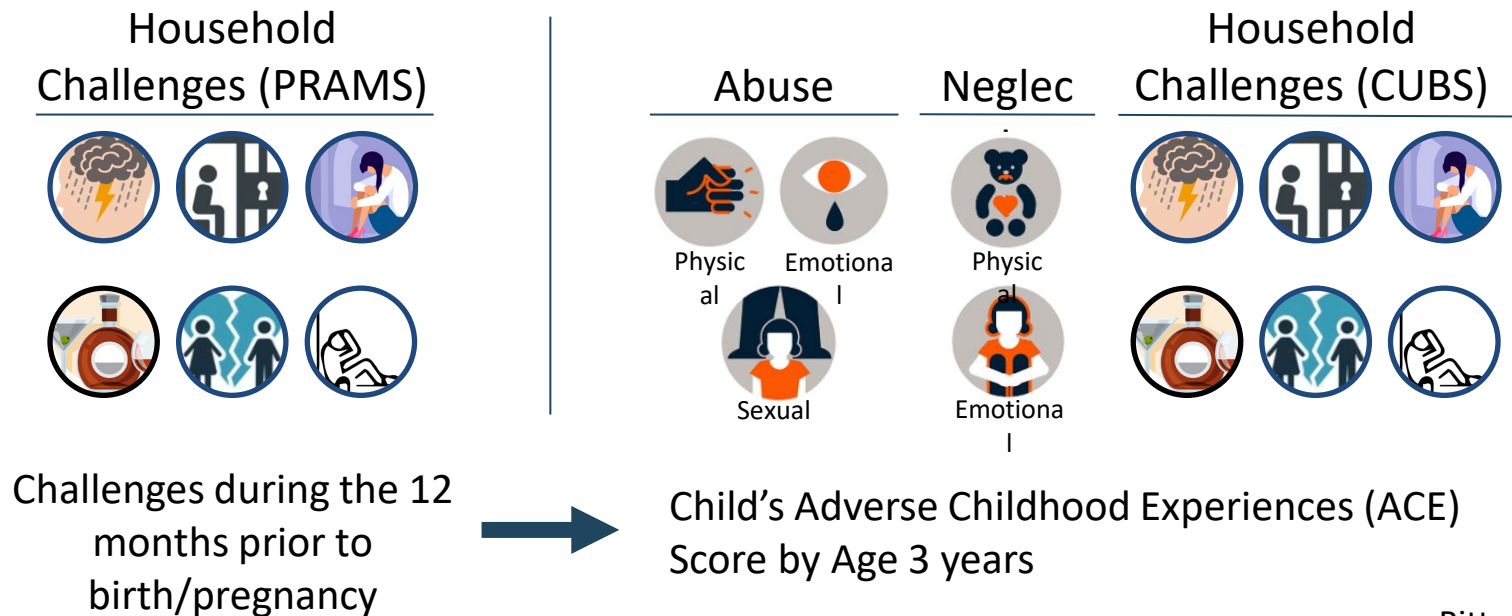
Top 4 individual ACES:

- 1) Financial issues paying bills (23.1%)
- 2) Parent job loss (19%)
- 3) Substance abuse in close family member (15.5%)
- 4) Neglect (15.3%)

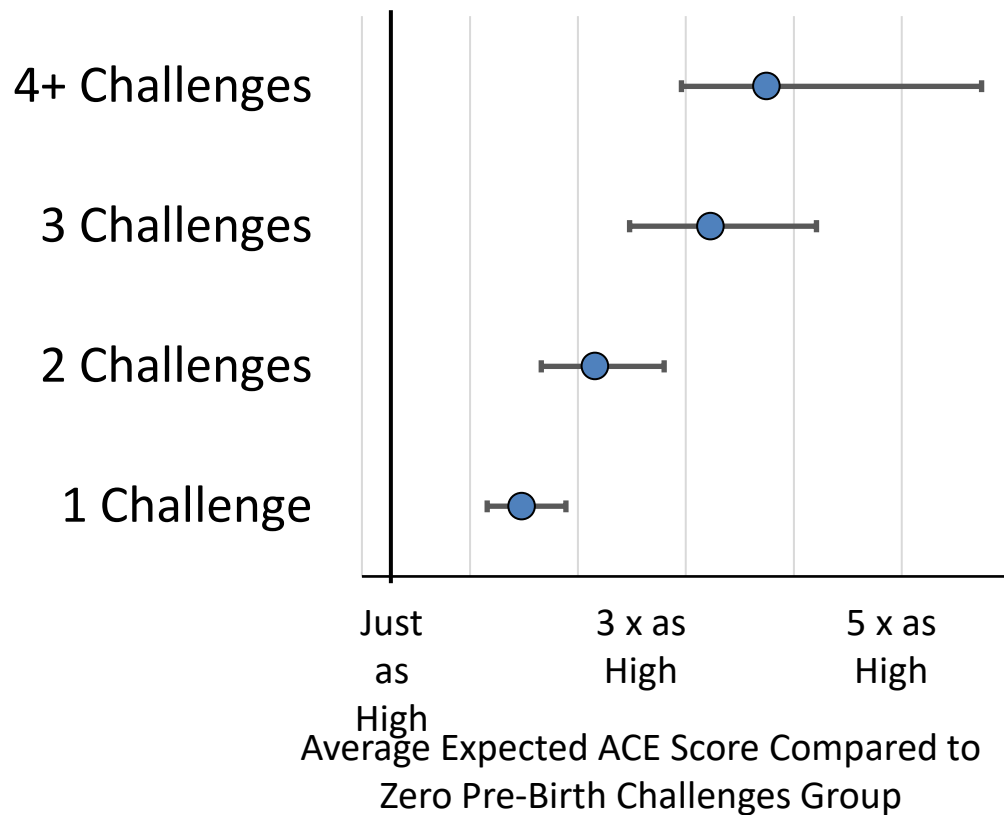
Source: ALCANLink, 2009 – 2018 births, Alaska Department of Health, Division of Public Health, Section of Women's Children's and Family Health

PRE-BIRTH CHALLENGES IMPACT ON EARLY CHILDHOOD EXPERIENCES

Pre-Birth Household Challenges Predicting Child ACE Score



Rittman et al.
(2020)



Pre-Birth Household Challenges Predict Child ACE Score at age 3 years!

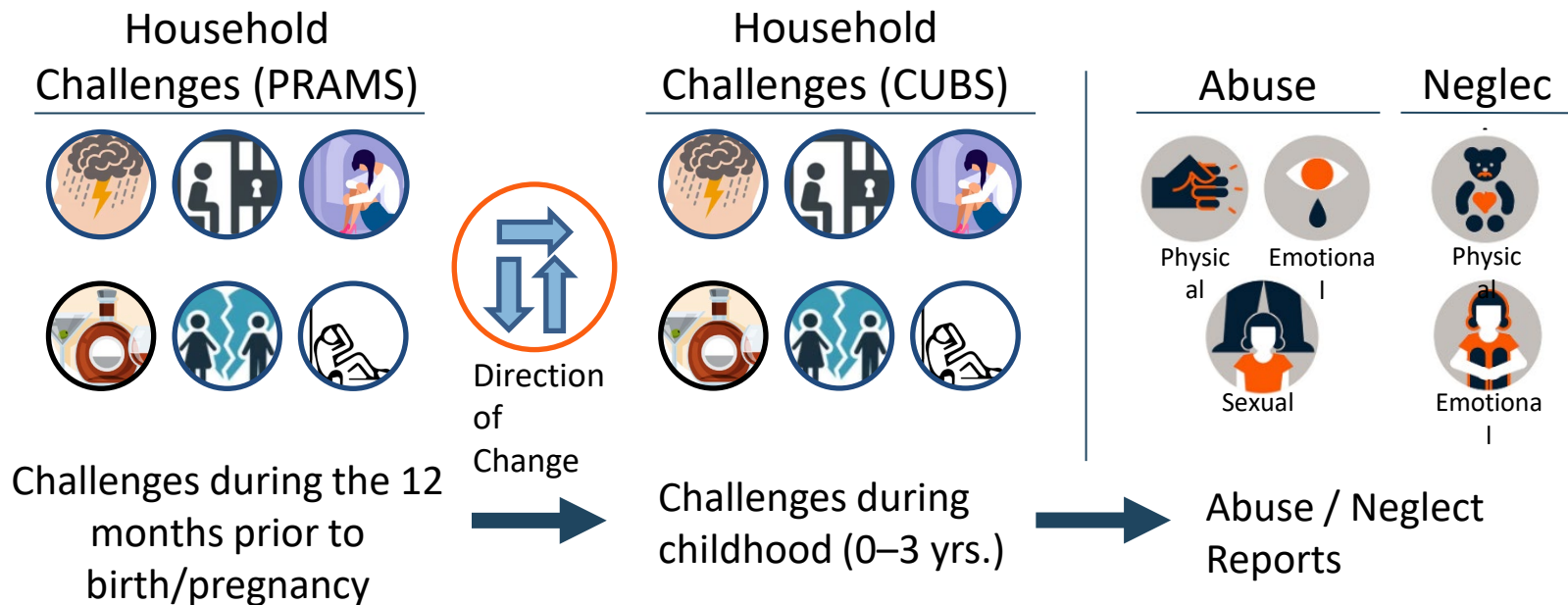
Key Point:

For each additional pre-birth challenge reported, a systematic relative increase in average childhood ACE score was observed.

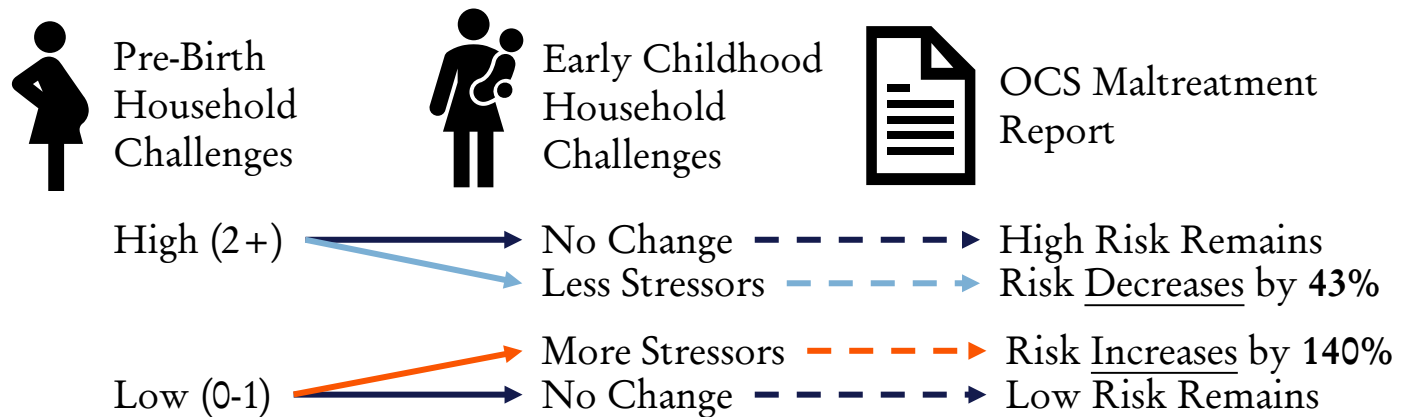
Rittman et al. (2020)

Changes in Household Challenges

Predicting Maltreatment

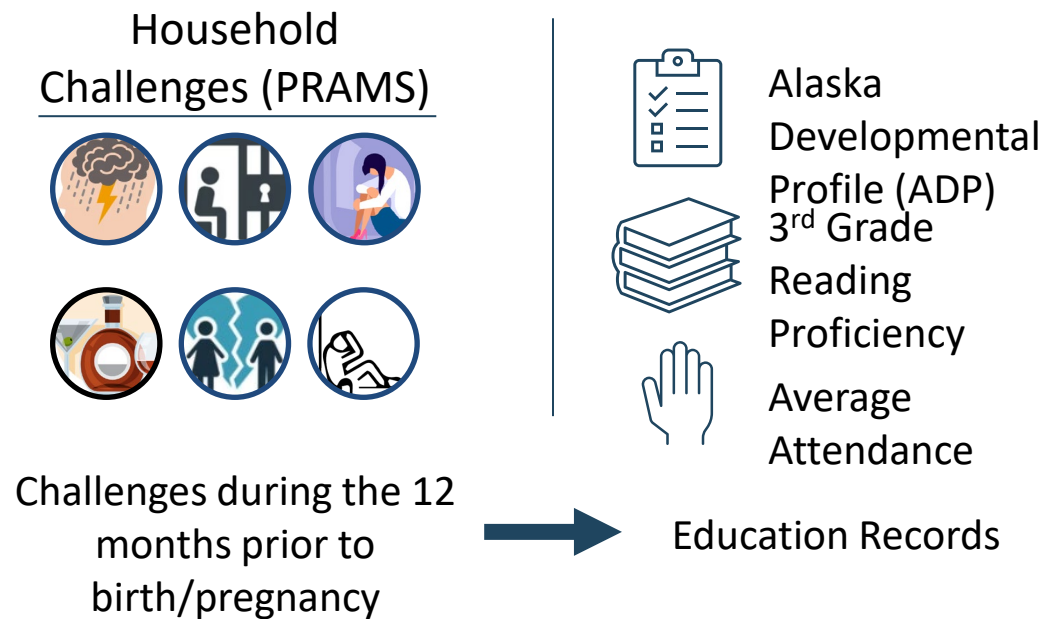


A Change in the Number of Household Challenges is Associated with Change in Risk of OCS Report



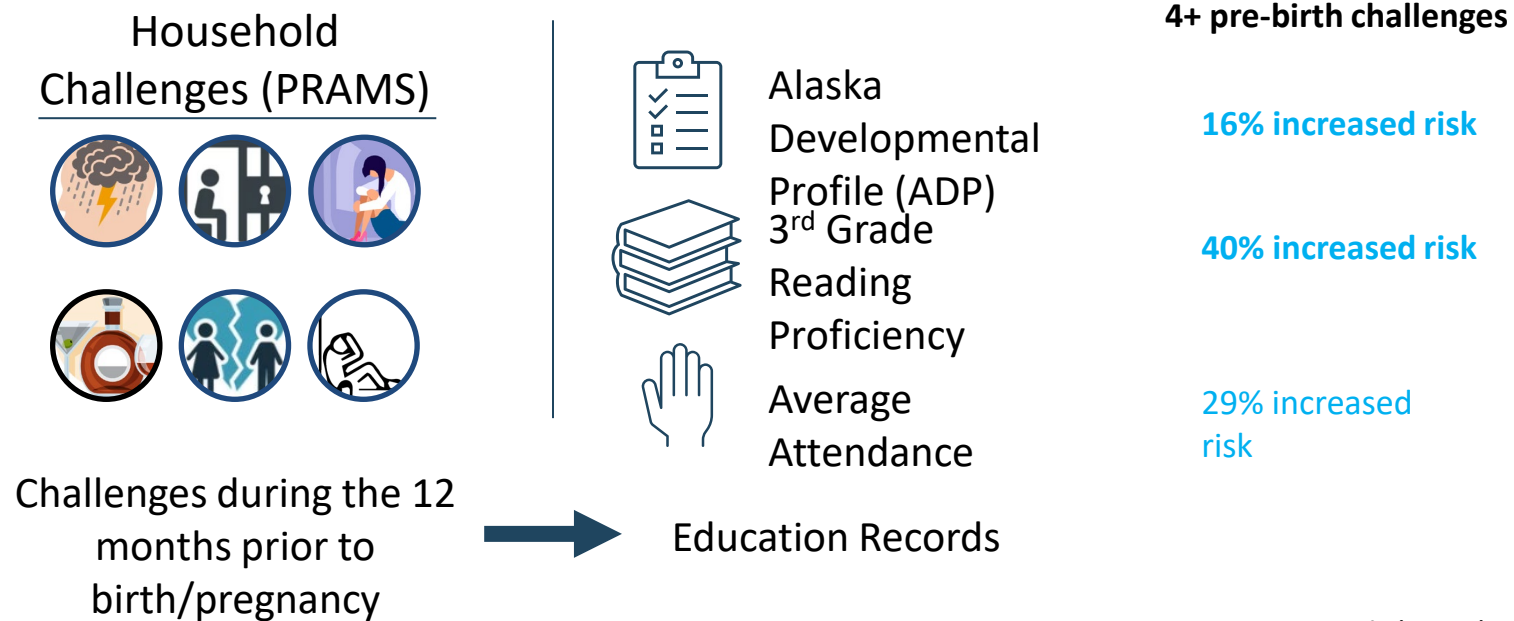
OCS: Office of Children's Services

Pre-Birth Household Challenges Predict School Readiness & Academic Achievement.



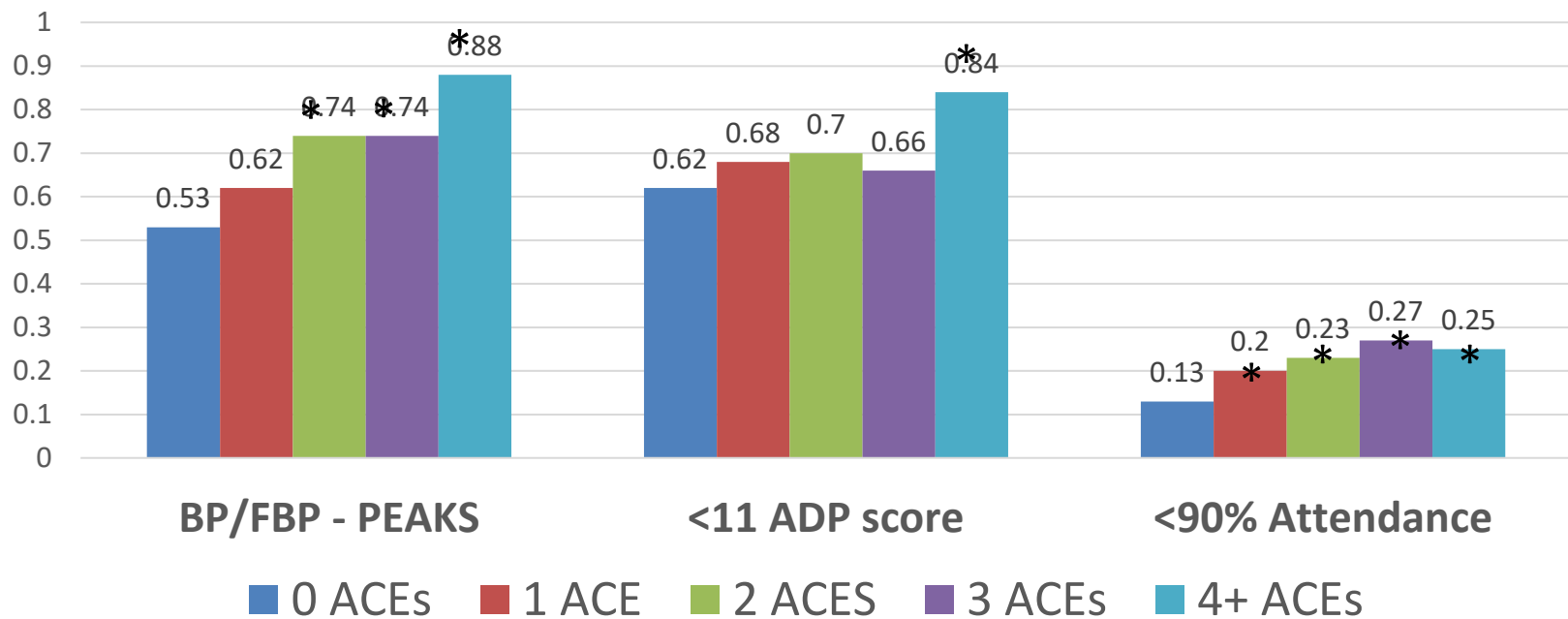
Husa et al. (2022)

Pre-Birth Household Challenges Predict School Readiness & Academic Achievement.



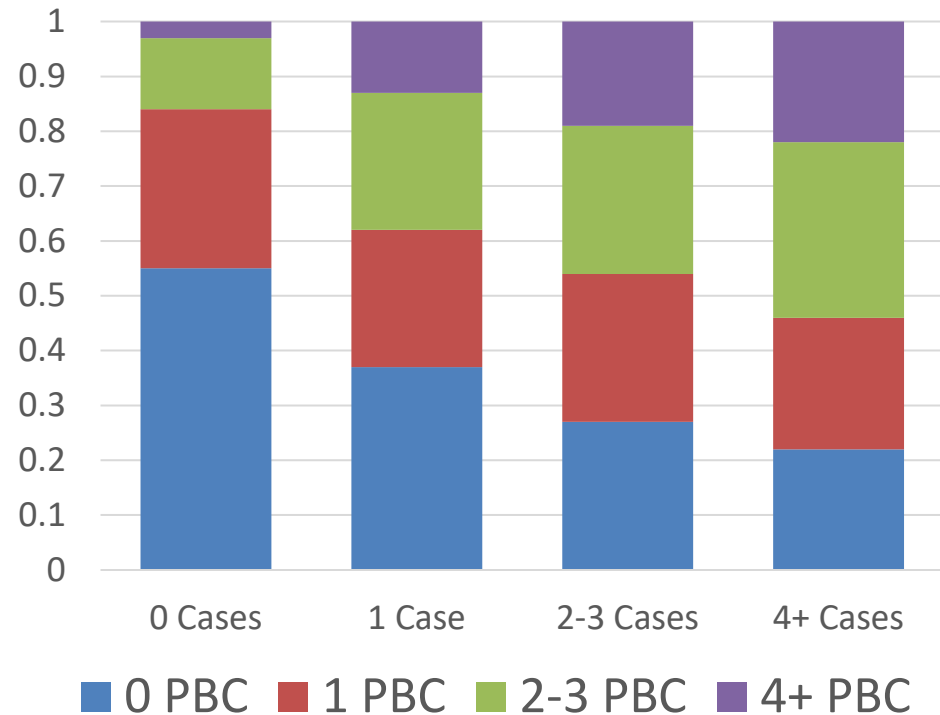
Husa et al. (2022)

ACEs at age 3- years and School readiness



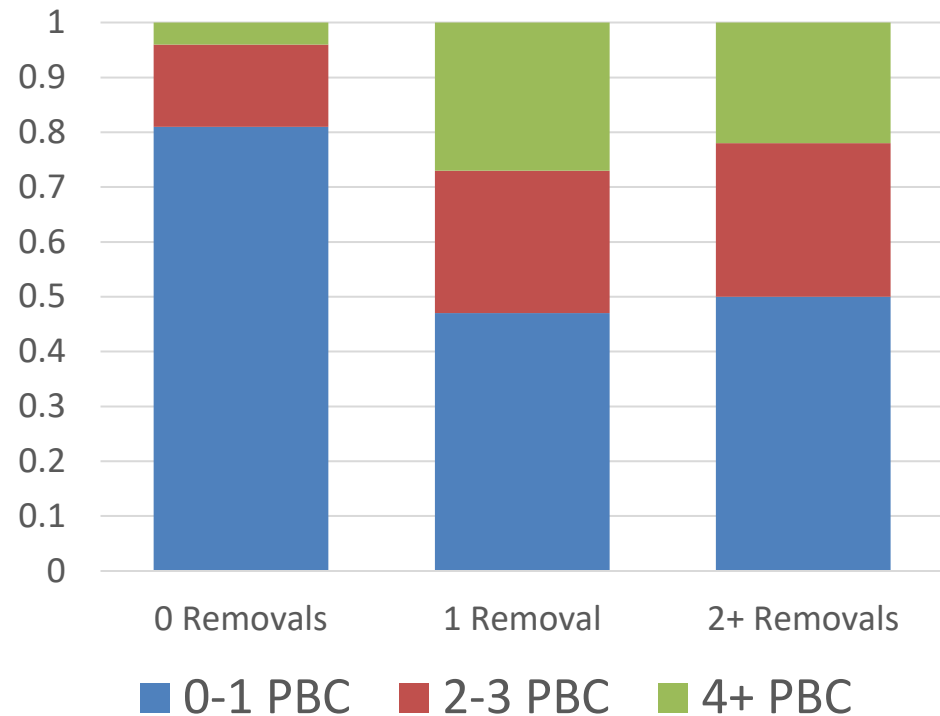
Number of pre-birth challenges by OCS cases

As number of screened-in cases increases the proportion with multiple prebirth challenges increases

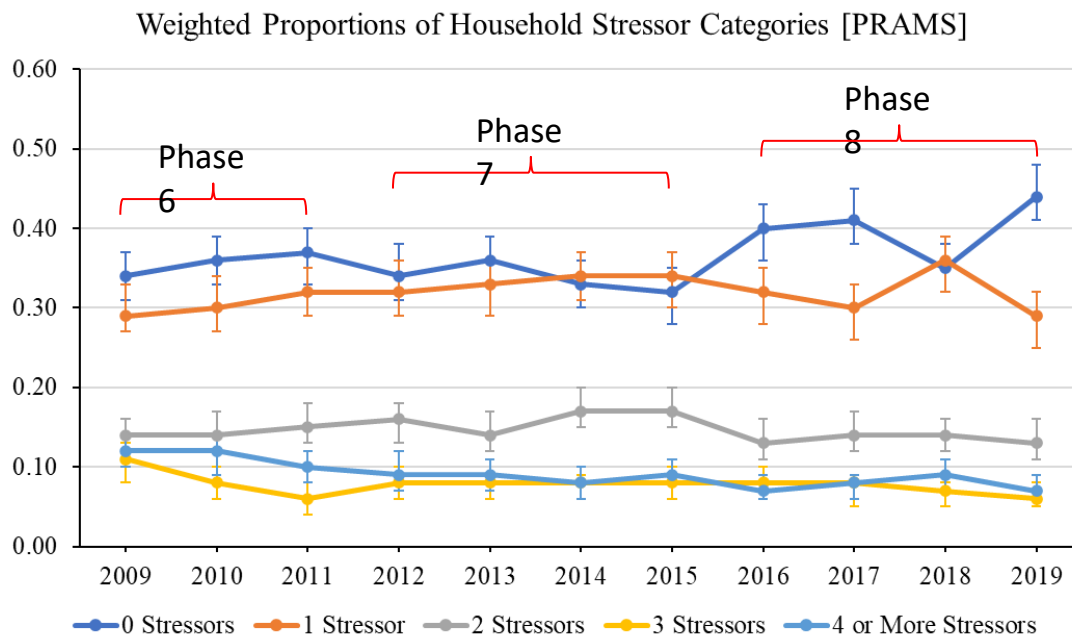


Number of pre-birth challenges by OCS removals

Over 50% of those experiencing at least 1 removal were born to mothers reporting 2 or more pre-birth household challenges.

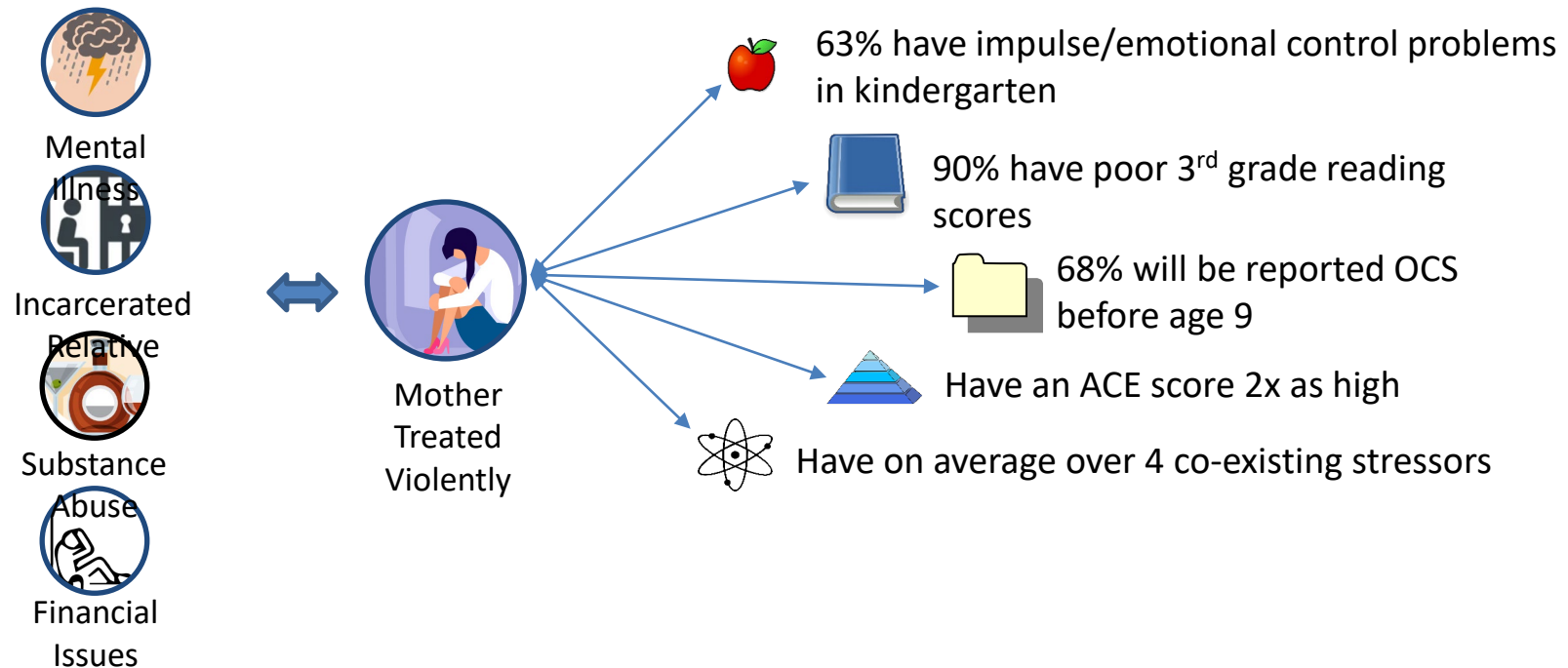


Pre-Birth Household Challenges hasn't changed much over time



Note: Trending across PRAMS phases should be interpreted with caution due to changes in some questions asked.

Connecting Early Indicators with Child Outcomes



Coming soon!

Overcoming ACES with Resiliency (OARS) survey

- **Goal:** Collect ACEs data in the context of protective experiences at each socio-ecological level.
- Method: Web-based survey, ~80 questions
 1. Protective factor section
 2. Adult health outcomes section
 3. ACEs section
 4. Demographics section

We've moved beyond simply quantifying experiences to doing something about them!

PRAMS, CUBS, and YRBS
measure ACEs and other risk
factors among women, children, and
youth

2013

The Behavioral Risk Factor Surveillance System (BRFSS) adds the ACEs module to the Alaska survey

2015

The last year of the BRFSS using the ACEs module

2020

The Alaska Victimization Survey measure ACEs and other risk factors among women

2021

DHSS ACEs Surveillance Work Group started to centralize ACEs data

2022

A 10-year follow up to the BRFSS **ACEs estimates with protective factor** questions

Contact Information

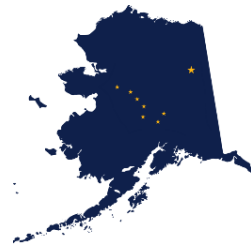
Jared Parrish, PhD

Email: jared.parrish@alaska.gov

ALCANLink website:

<http://dhss.alaska.gov/dph/wcfh/Pages/mchept/ALCANlink/>

Economic costs of ACEs in Alaska



HEALTH BEHAVIOR OR OUTCOME

EST. ANNUAL COSTS LINKED W/ACEs

Adult Medicaid (Age 20+)

\$382 million

Current Smoker

\$203 million

Non-Gestational Diabetes

\$117 million

Binge Drinking

\$69 million

Arthritis

\$60 million

Obesity

\$34 million

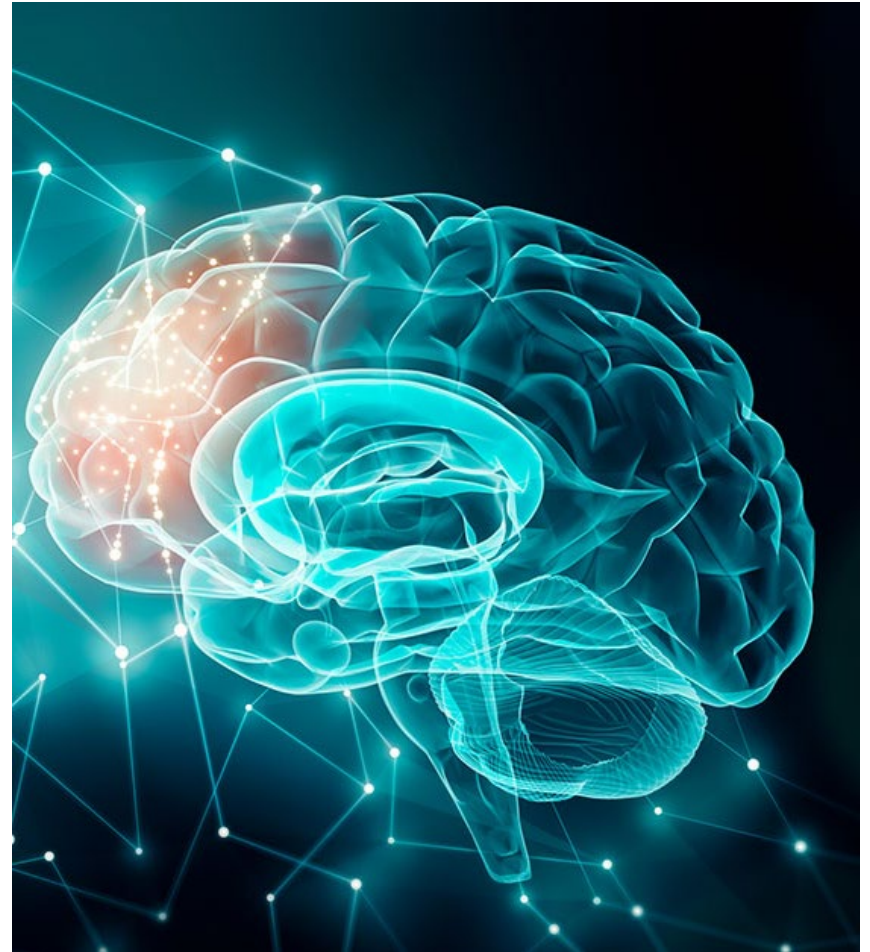
TOTAL

\$866 million



ALASKA
RESILIENCE
INITIATIVE

Linda Chamberlain, PhD



Risk and Resiliency

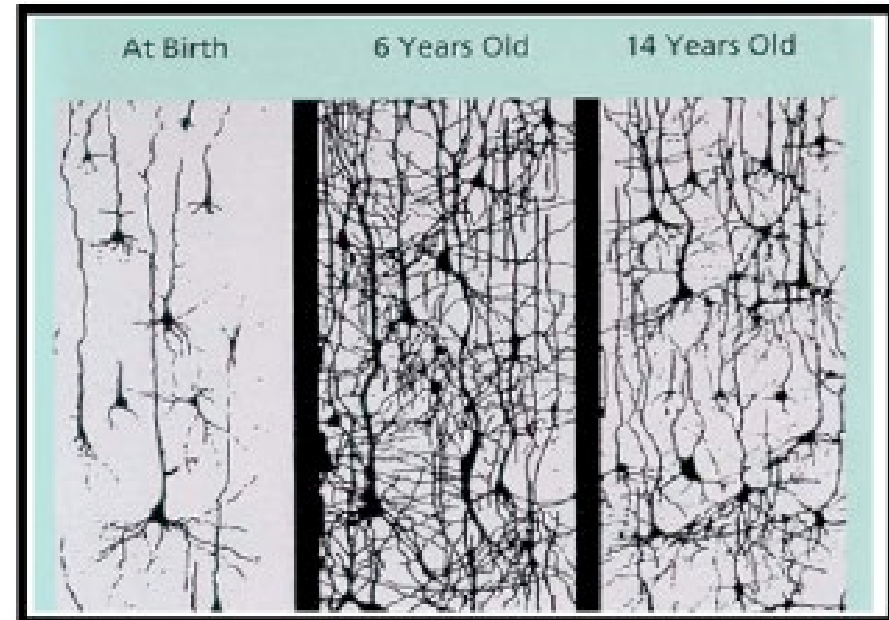
Neuroplasticity=the ability of the human brain to adapt and change in response to experience and environment



SYNAPTIC PRUNING:

The Right Experience at the Right Time

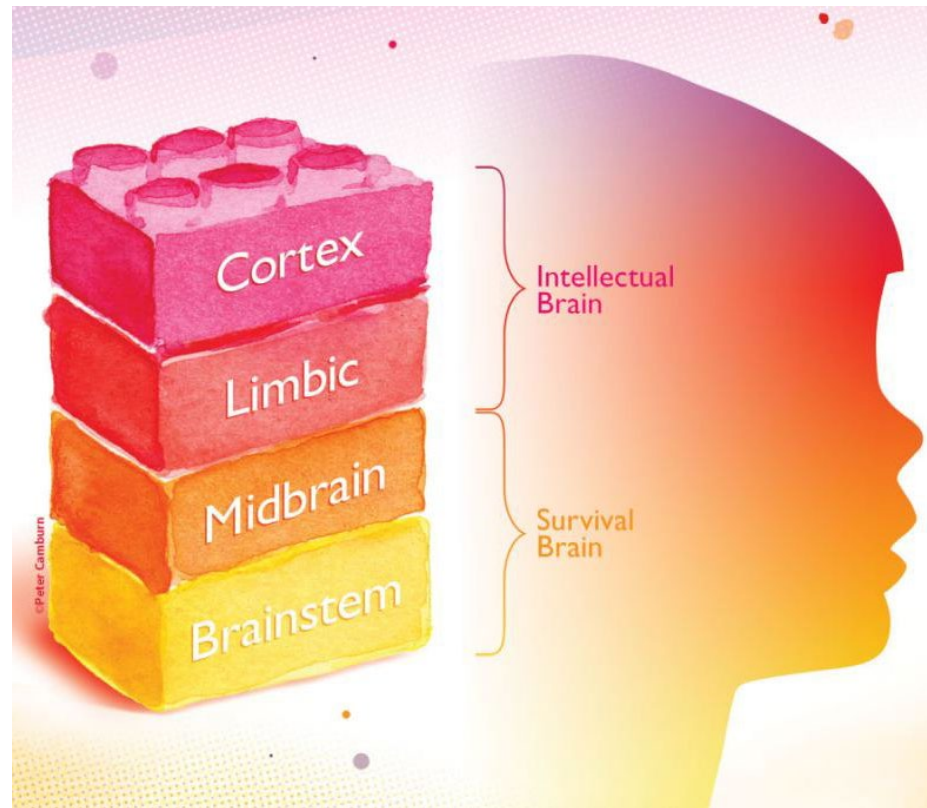
- SYNAPSES=WIRING OF BRAIN
- Experience builds the brain
 - birth: 50 trillion synapses
 - 1 year: 1,000 trillion
 - 20 years: 500 trillion



NATURE AND NURTURE!!

Sequential Development of a Child's Brain

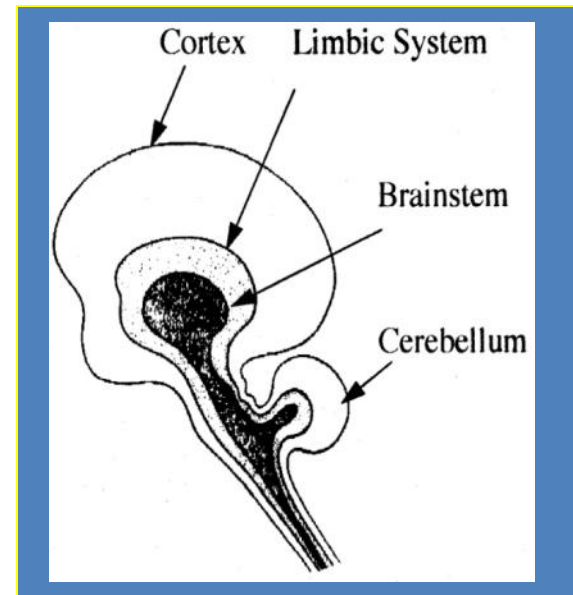
Abstract Thought
Problem solving
Affiliation
Attachment
Emotional Reactivity
Motor Regulation
Sleep
Digestion
Blood Pressure
Heart Rate
Respiration
Body Temperature



Peter Camburn

There are Sensitive Periods of Development

- Emotions are set by the limbic system and prefrontal lobes
- Limbic system forms an emotional blueprint for later use
- Both lobes are developed and connected early in life (8-18 months)



Positive Stress

Tolerable Stress

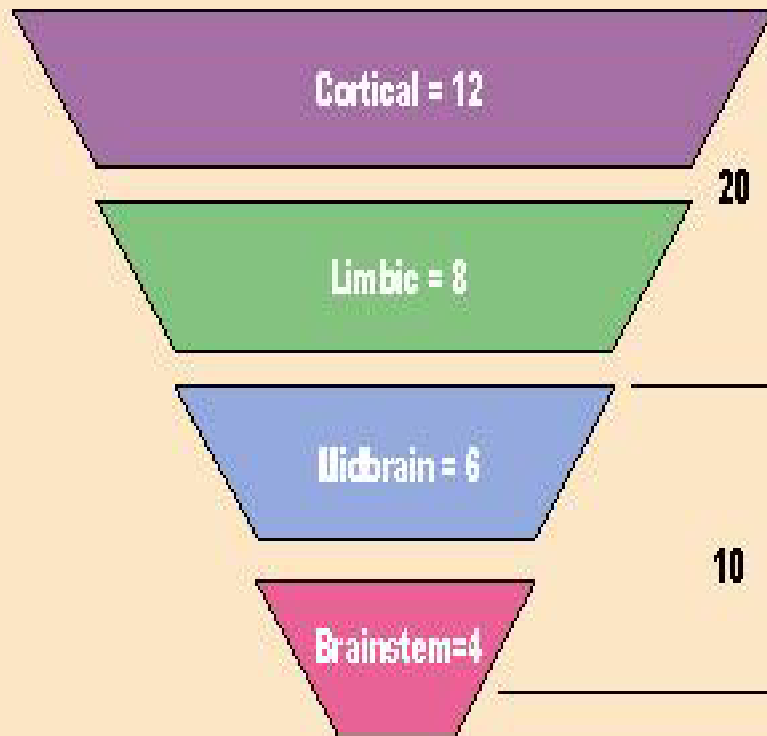
Toxic Stress

Intense, repeated, unaddressed, absence of nurturing caregivers and supportive relationships, poor social-emotional, coping and self-regulation skills

Nurturing caregivers, supportive relationships, strengthening social-emotional, coping and self-regulation skills, early intervention

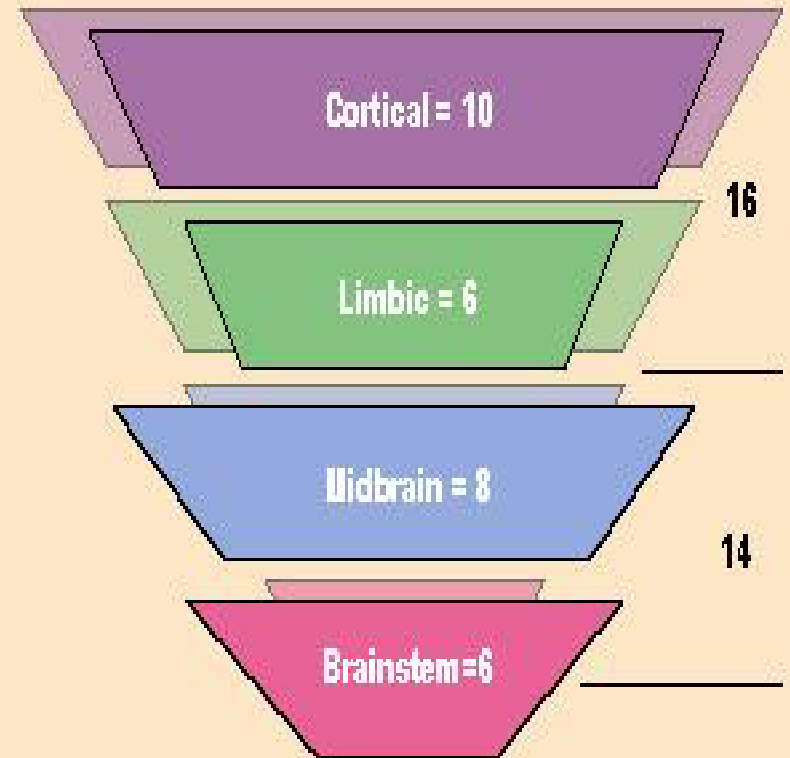
Traumatic Brain Development

NORMAL



2:1 ratio

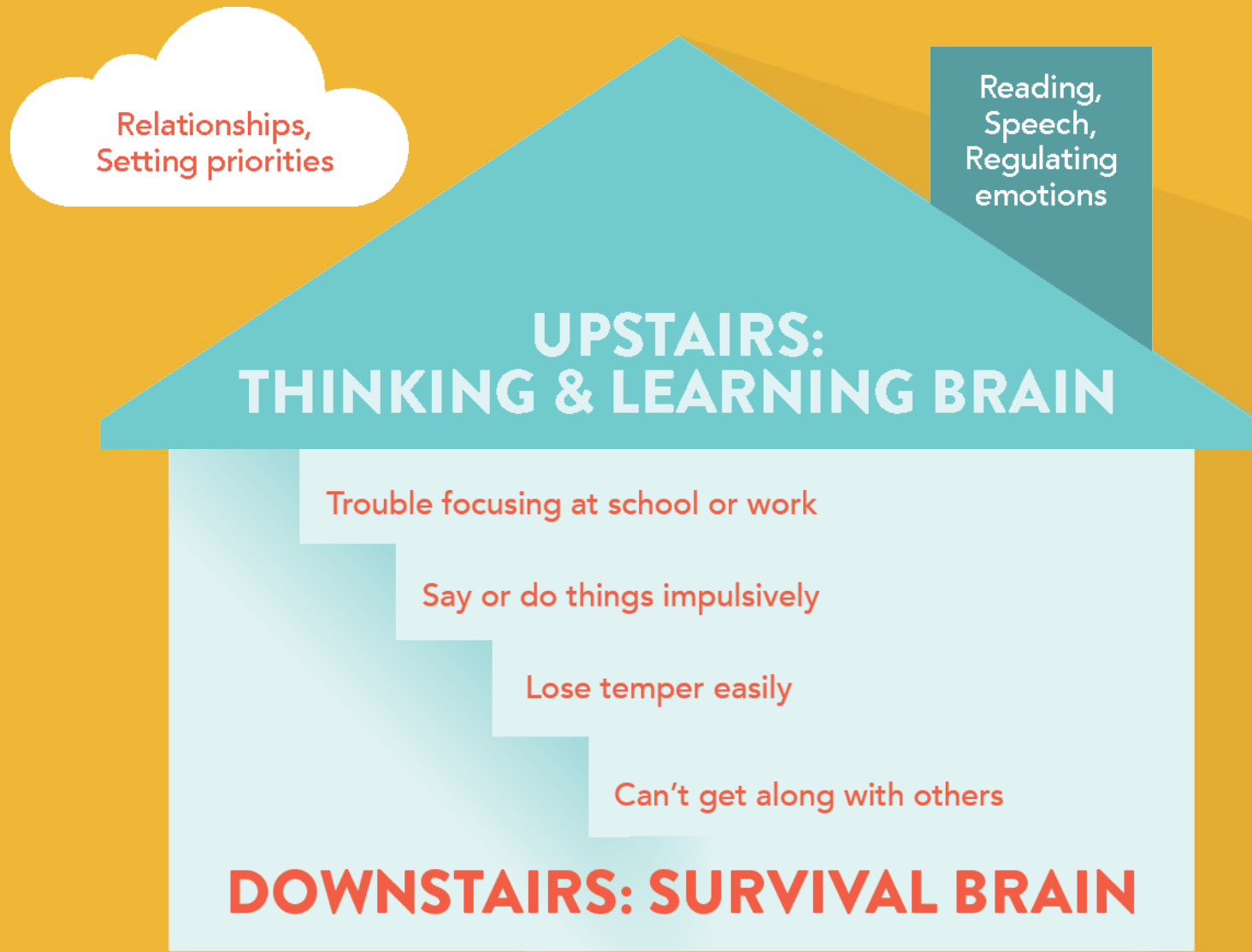
TRAUMA



Cortical Modulation Ratio

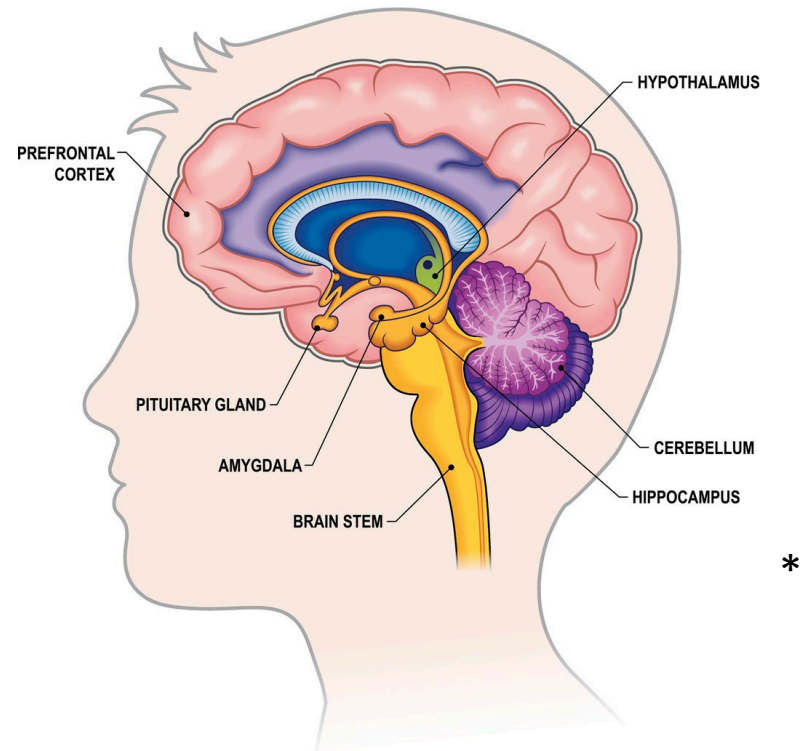
~1:1 ratio

We need to feel safe to think and learn,
but stress can push us DOWNSTAIRS in our brain...



Toxic Stress and the Brain

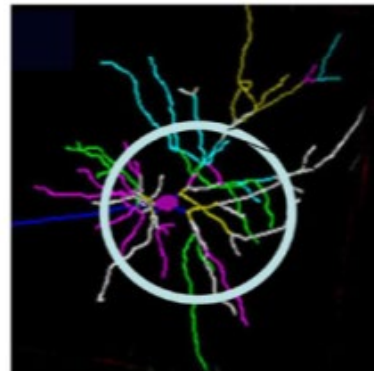
- Neural circuitry for dealing with stress is especially malleable during childhood
- Can affect hormone and neurotransmitter levels including serotonin and noradrenalin
 - Prolonged, escalated stress response



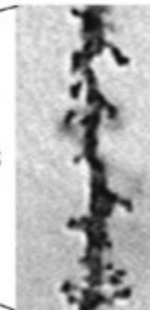


Persistent Stress Changes Brain Architecture

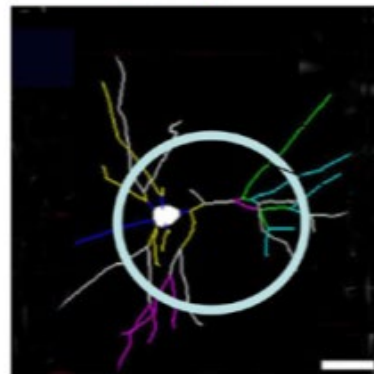
Normal



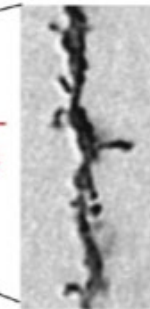
Typical neuron—
many connections



Toxic
stress



Damaged neuron—
fewer connections

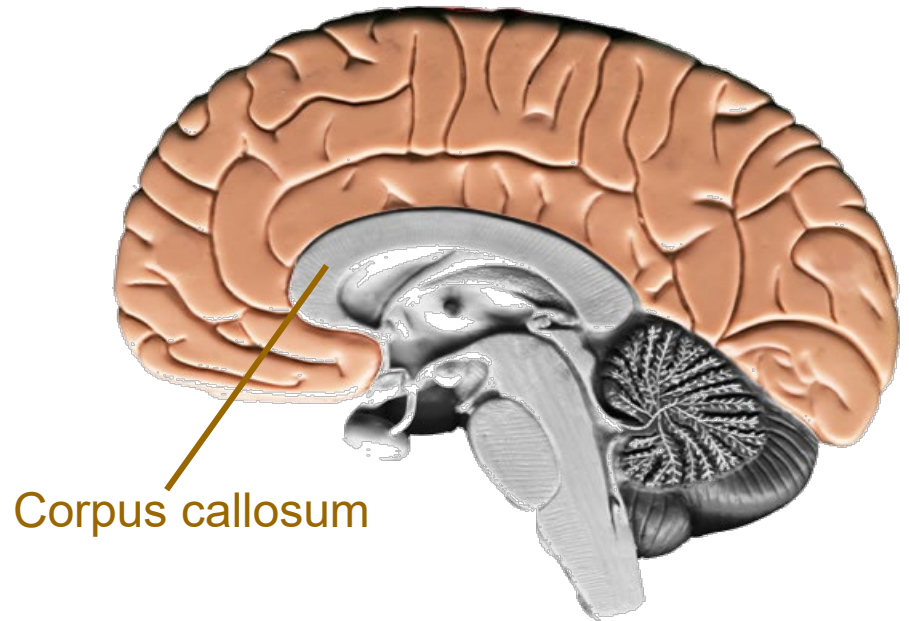


Prefrontal Cortex and
Hippocampus

Sources: Radley et al. (2004)
Bock et al. (2005)

Corpus Callosum

- Neural highway connecting right and left hemispheres
- Reduced area/integrity is most consistent neurobiological finding in children and adults with history of ACEs
- Diminished right-left hemisphere integration



What Can This Mean in Terms of Behavior

- More impulsive, reactive brain
 - “Always on the ready”
- Less able to get to the “thinking/rationale” brain under stress
- Compromises social emotional skills
- Interferes with learning

Developmental Disconnect

Trauma Interferes with Learning

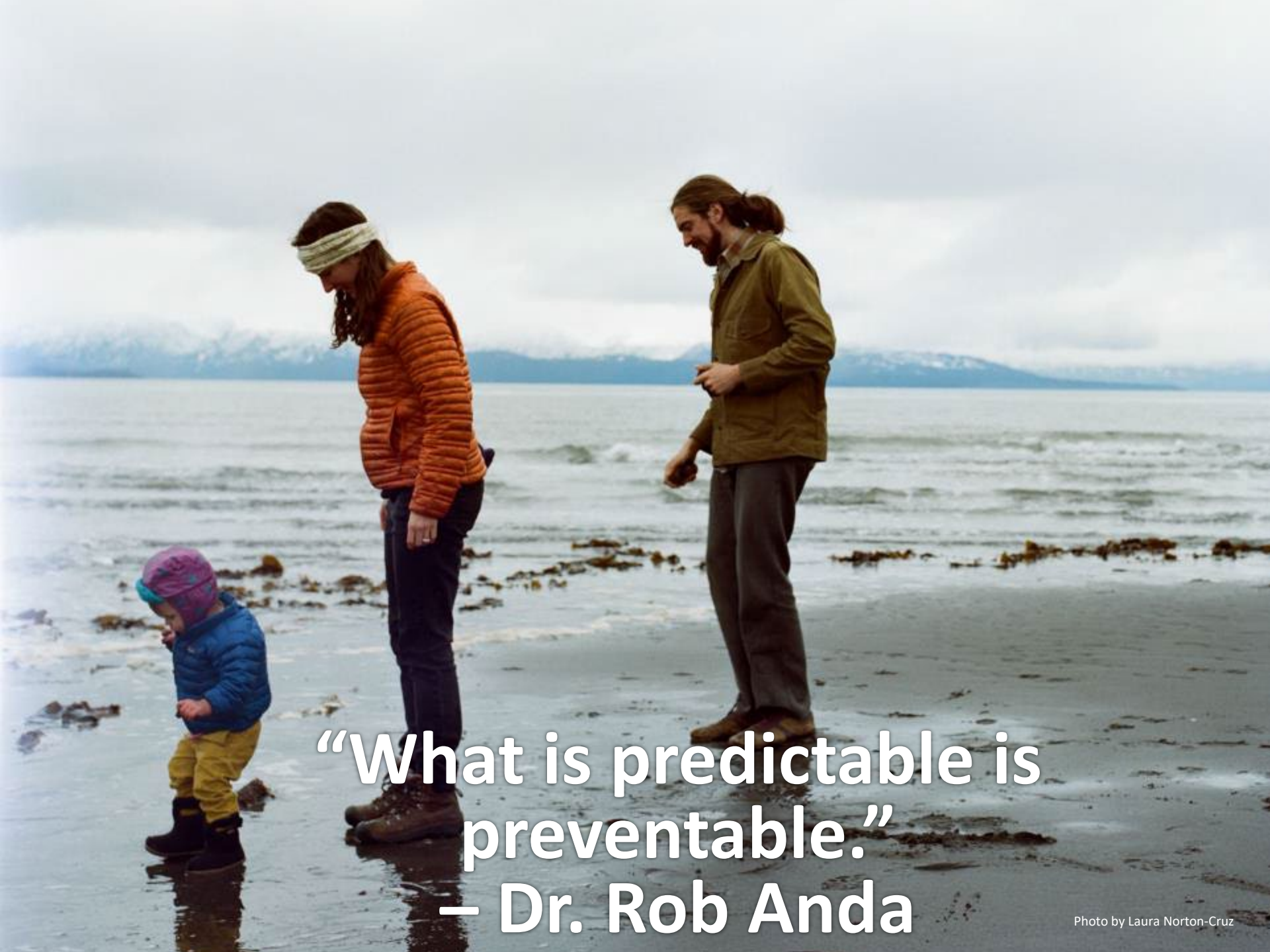
- IQ and reading ability
- Lower grade point average and ↑ days absent from school
- Significant deficits in attention, abstract reasoning, long term memory for verbal information, and decreased reading ability



Linda Chamberlain, PhD

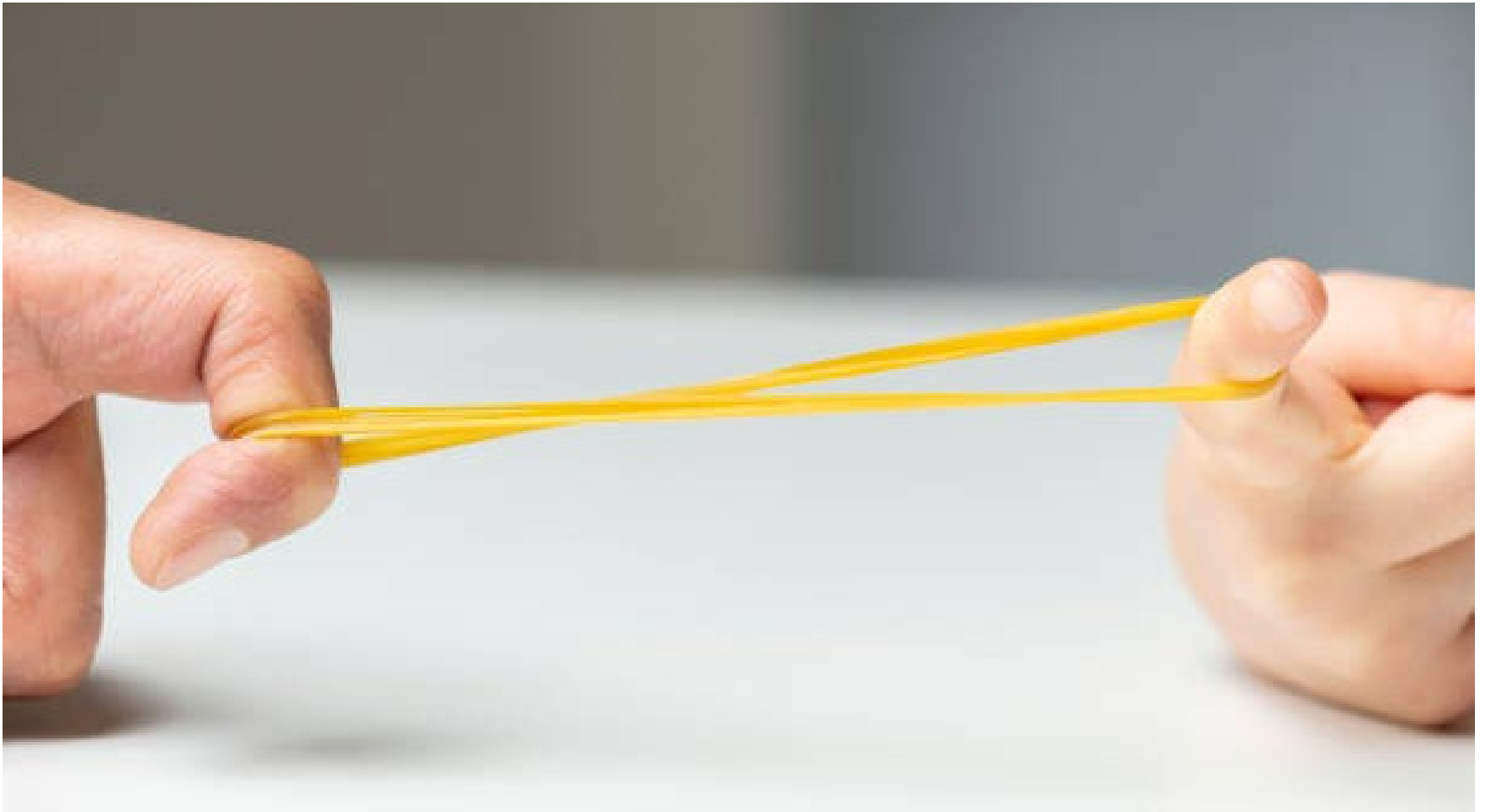
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**“What is predictable is
preventable.”
– Dr. Rob Anda**

Life is like an Elastic Band



What can resilience look like?



**Follows
Through**

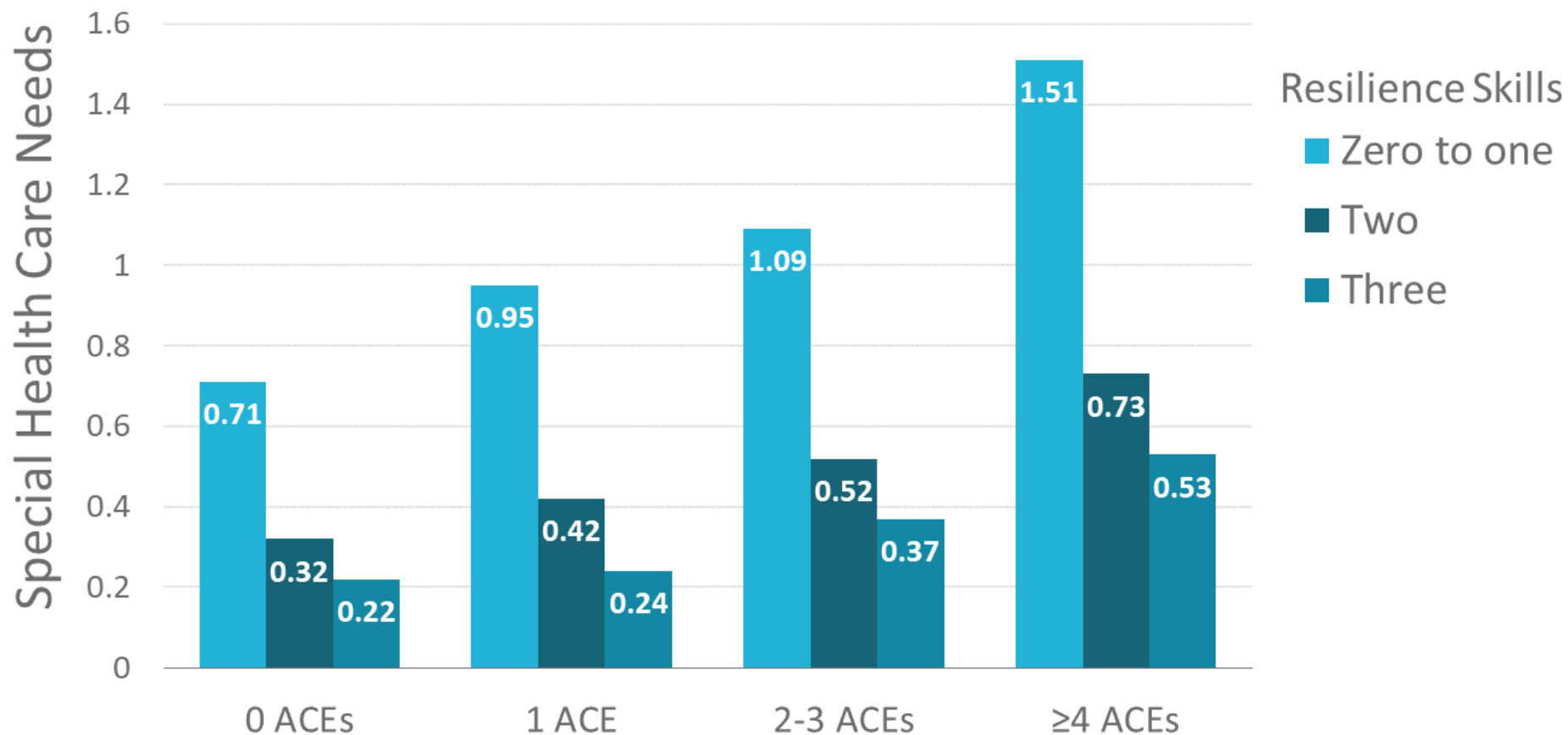
**Stays
Calm**

**Shows
Curiosity**



Source: Child and Adolescent Health Management Initiative (2012). "2011-2012 National Survey of Children's Health (2012), U.S. Department of Health and Human Services, Health Resources and Services Administration. Analysis done by the Alaska Mental Health Board and Advisory Board on Alcoholism and Drug Abuse Staff
Photos by Nathaniel Wilder

Resilience Skills Decrease Health Effects



Source: Child and Adolescent Health Management Initiative (2012). "2011-2012 National Survey of Children's Health (2012), U.S. Department of Health and Human Services, Health Resources and Services Administration. Analysis done by the Alaska Mental Health Board and Advisory Board on Alcoholism and Drug Abuse Staff

PRIMARY PREVENTION



Strategies that Address the Needs of Children & their Families



**Connect Youth to
Caring Adults**



**Strengthen Economic
Supports**

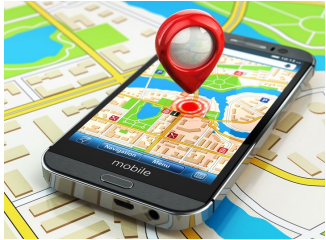


**Provide Quality Child Care
& Early Education**



Promote Culture

Strategies that Address the Needs of Children & their Families



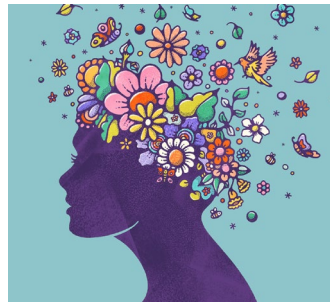
System Navigation



Healthy Relationships



Enhance Parenting Skills



Enhance Primary & Mental Health Care



alaska children's trust



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