

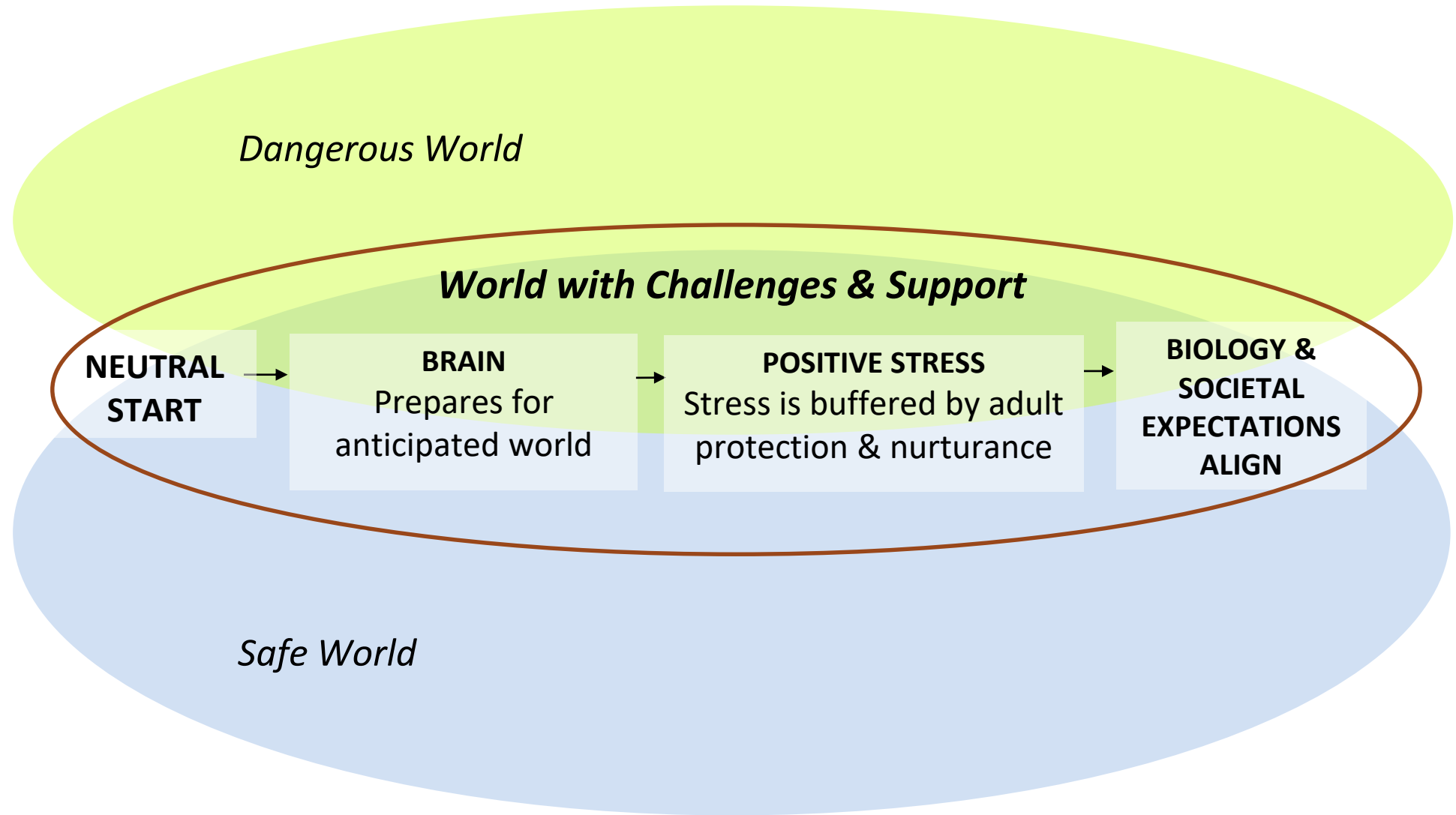


N.E.A.R. FLOURISHING

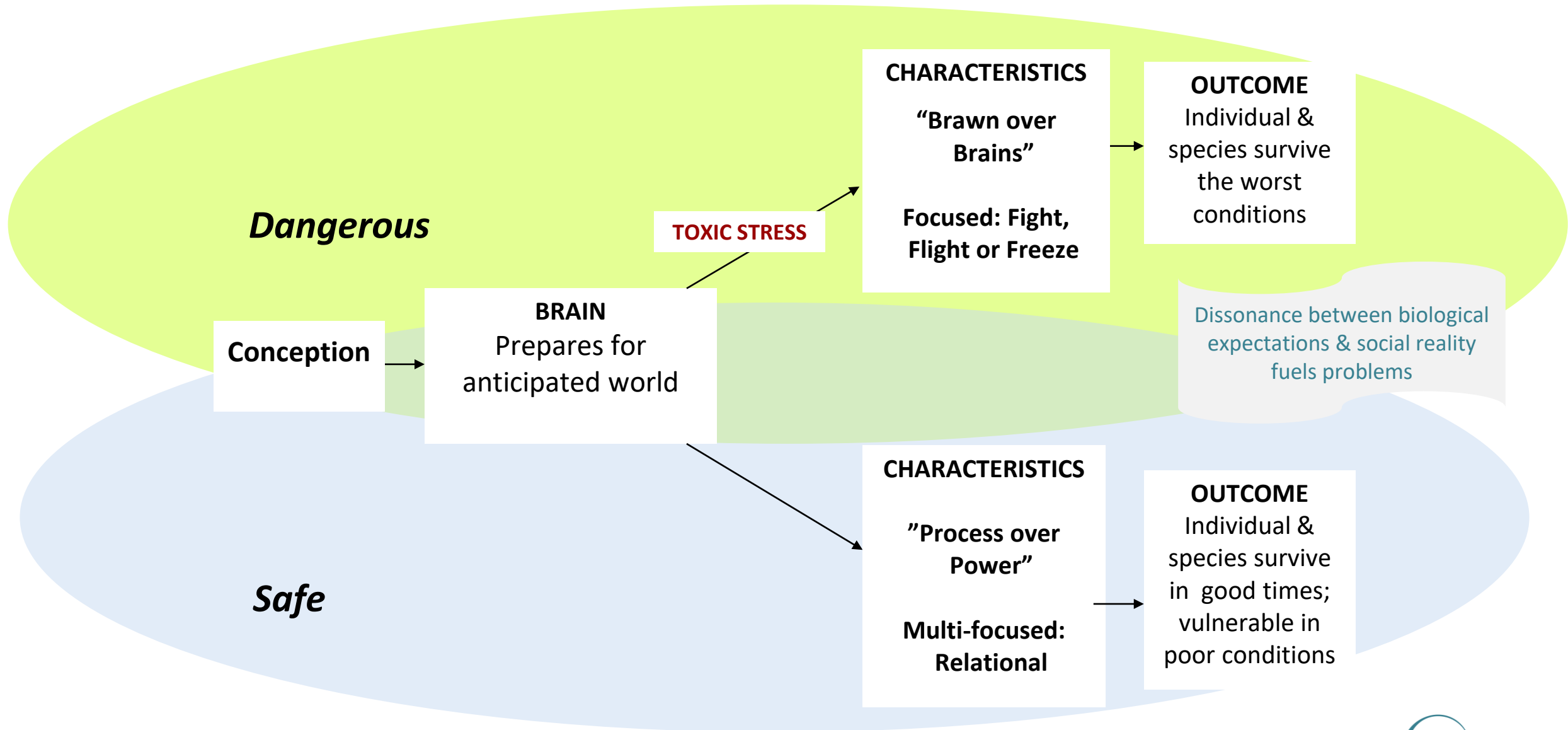
Neuroscience, Epigenetics, ACEs, Resilience


The Magnitude of the Solution

Neuroscience of Experience & Adaptation



Hardwired for Anticipated World





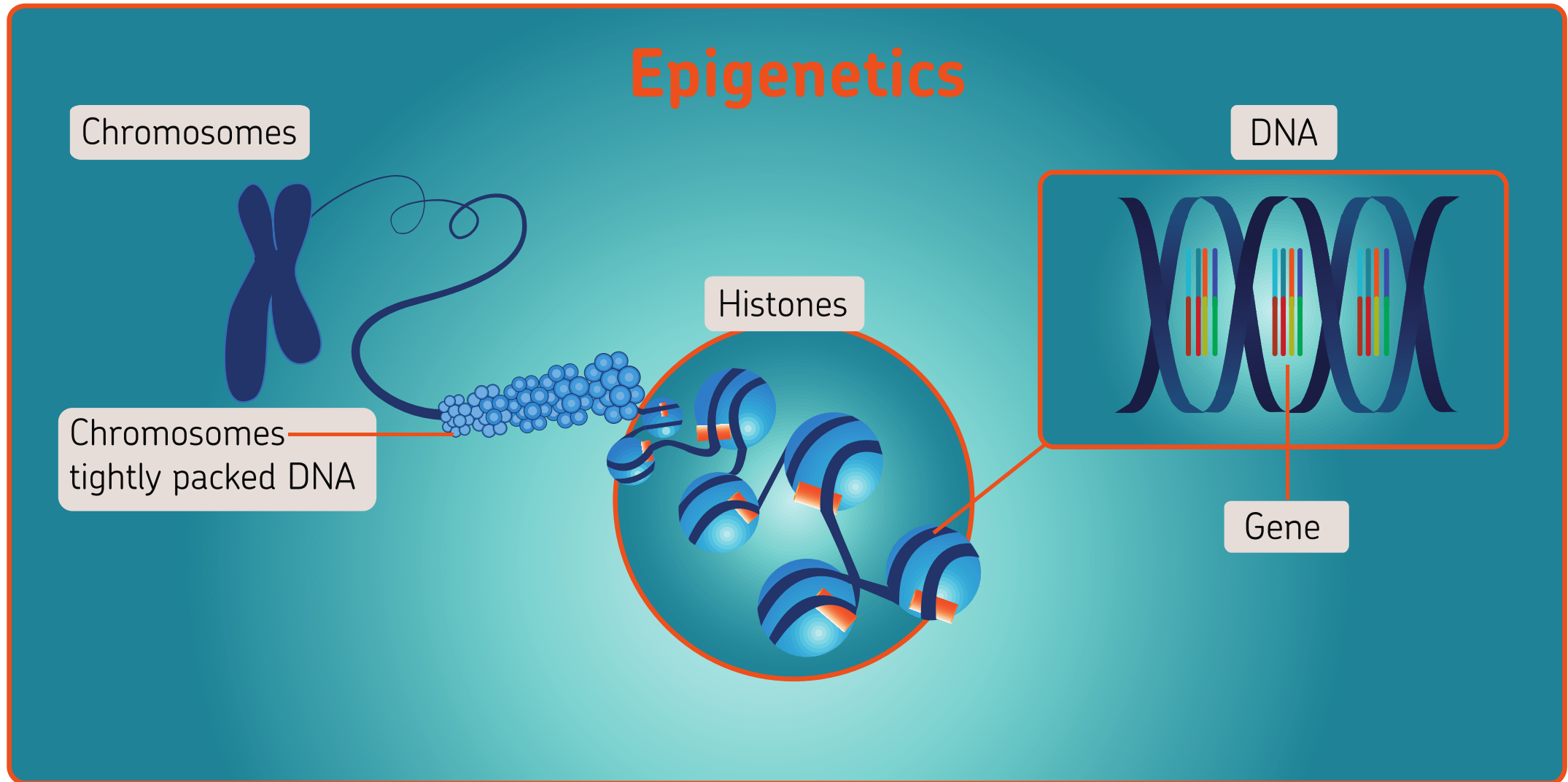
When I saw you
I fell in love, and
you smiled
because you knew.

- William Shakespeare

Epigenetics

“The experiences of a parent, before even conceiving offspring, markedly influence both structure and function in the nervous system of subsequent generations.”

ACEs Influence Gene Expression



Epigenetics



“Parents with their own genetic vulnerabilities can pass on protection to the next generation provided that they are given the right support.”

“Self regulation depends on having a friendly relationship with your body. Without it you have to rely on external regulation – from medication, drugs like alcohol, constant reassurance, or compulsive compliance with the wishes of others.”

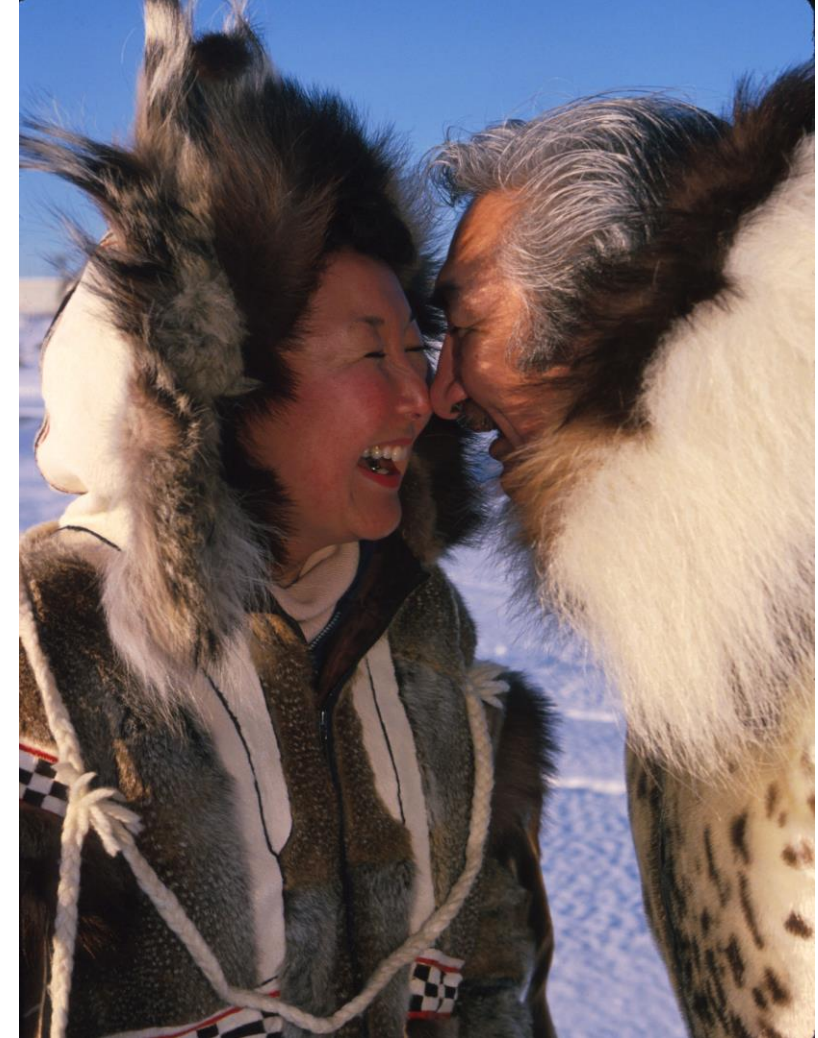
What Helps Individuals Self-regulate?

Activate Social Engagement:

1. Healing Power of Community Expressed in Music, Rhythm, Theatre
2. Exercise & Play
3. Practicing Connection

Calm Physical Tensions in Body:

1. Massage, Movement, Breathing
2. Mindfulness, Reflection, Yoga
3. Tapping Acupressure Points
4. Biofeedback, Neurofeedback
5. Eye Movement Desensitization & Reprocessing



Adverse Childhood Experiences

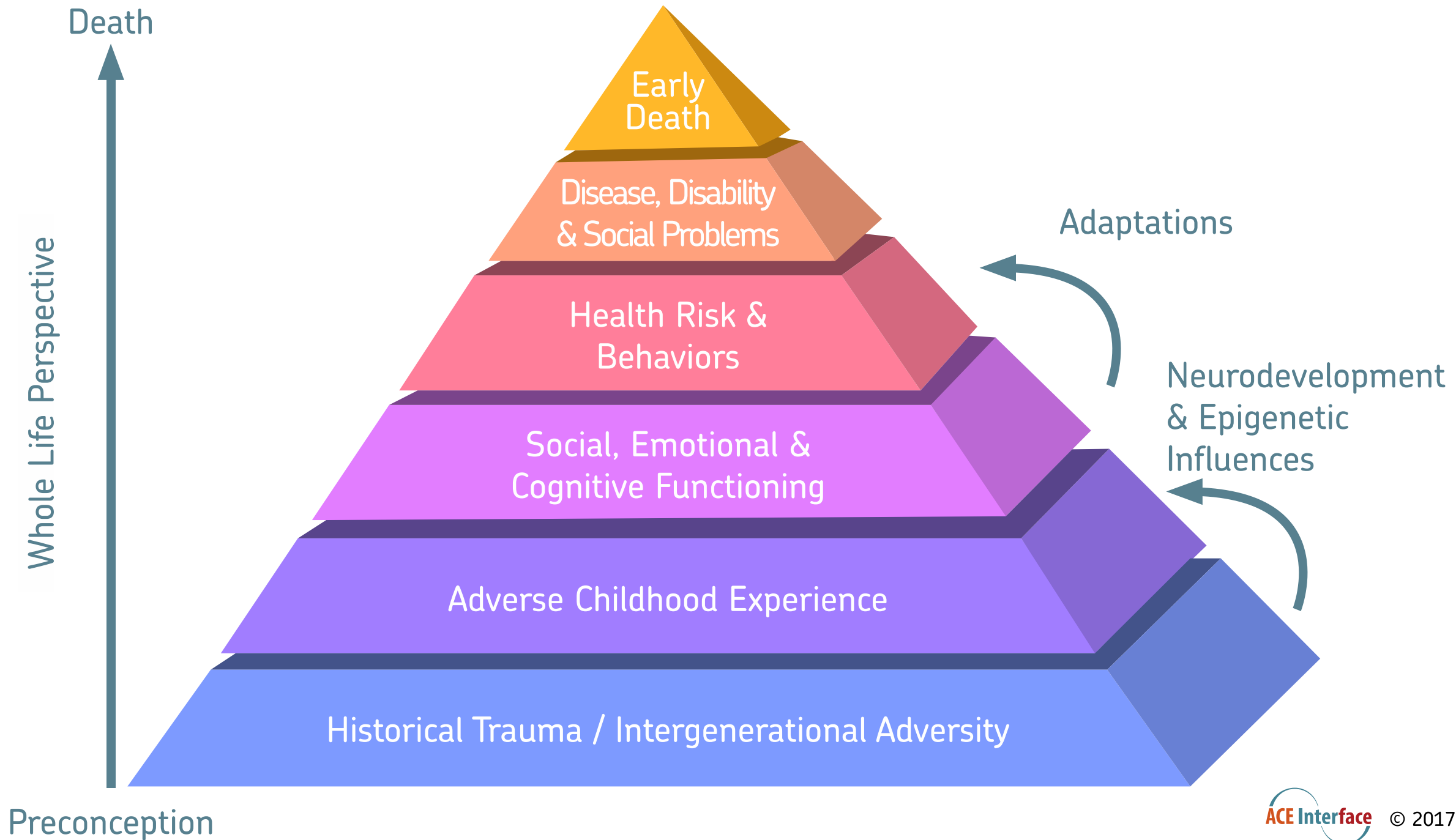
The Adverse Childhood Experience (ACE) Study is a retrospective and prospective population health study designed to examine the childhood origins of many of our nation's leading health and social problems.

Dr. John Snow
1854

~~Cholera Death is~~
~~Caused by Miasmas~~

1. New Way of Thinking
2. Shoe Leather Epidemiology
3. Lives Saved





Stress Categories Considered in ACE Study

Abuse

1. Child physical abuse (28%)
2. Child sexual abuse (21%)
3. Child emotional abuse (11%)

Neglect

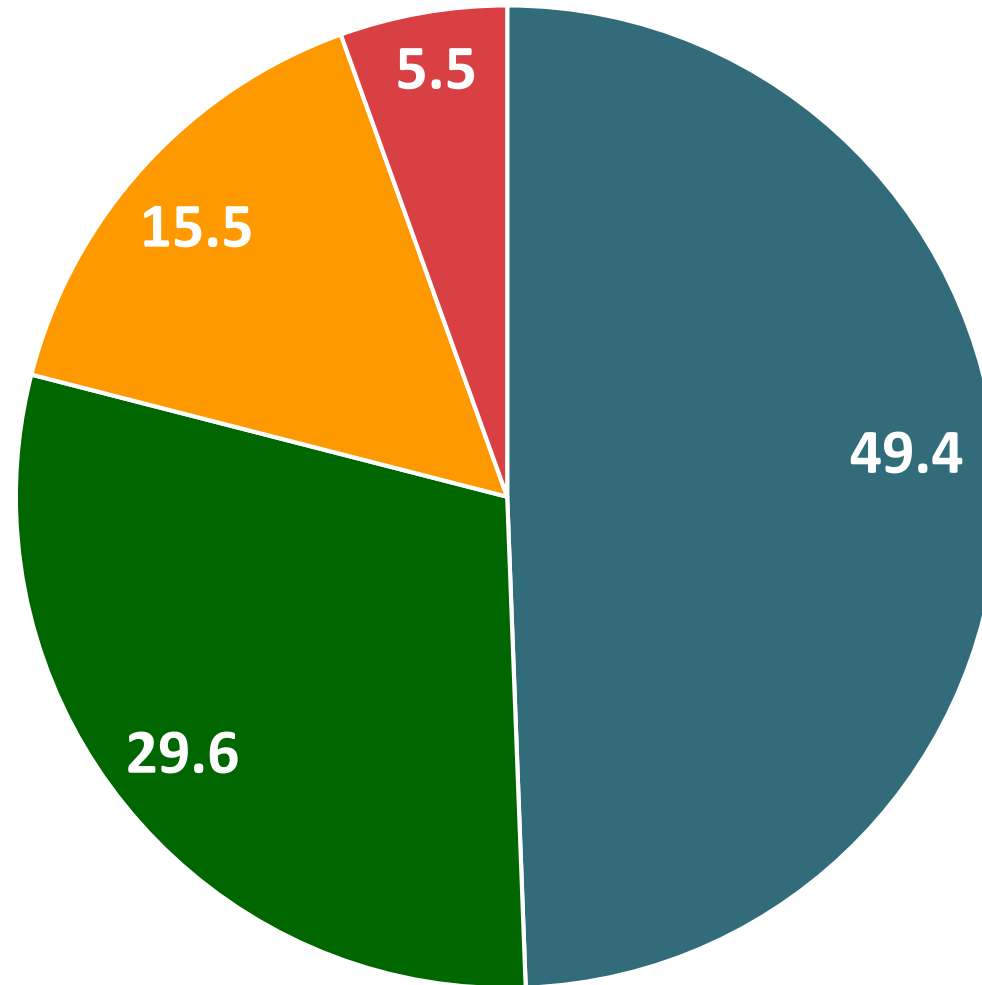
4. Physical Neglect (10%)
5. Emotional Neglect (15%)

ACE Score = # of Categories

Indicators of Family Dysfunction

6. Mentally ill, depressed or suicidal person in the home (19%)
7. Drug addicted or alcoholic family member (27%)
8. Parental discord – indicated by divorce, separation (23%)
9. Witnessing domestic violence against the mother (13%)
10. Incarceration of any family member (5%)

ACEs are Common in Illinois

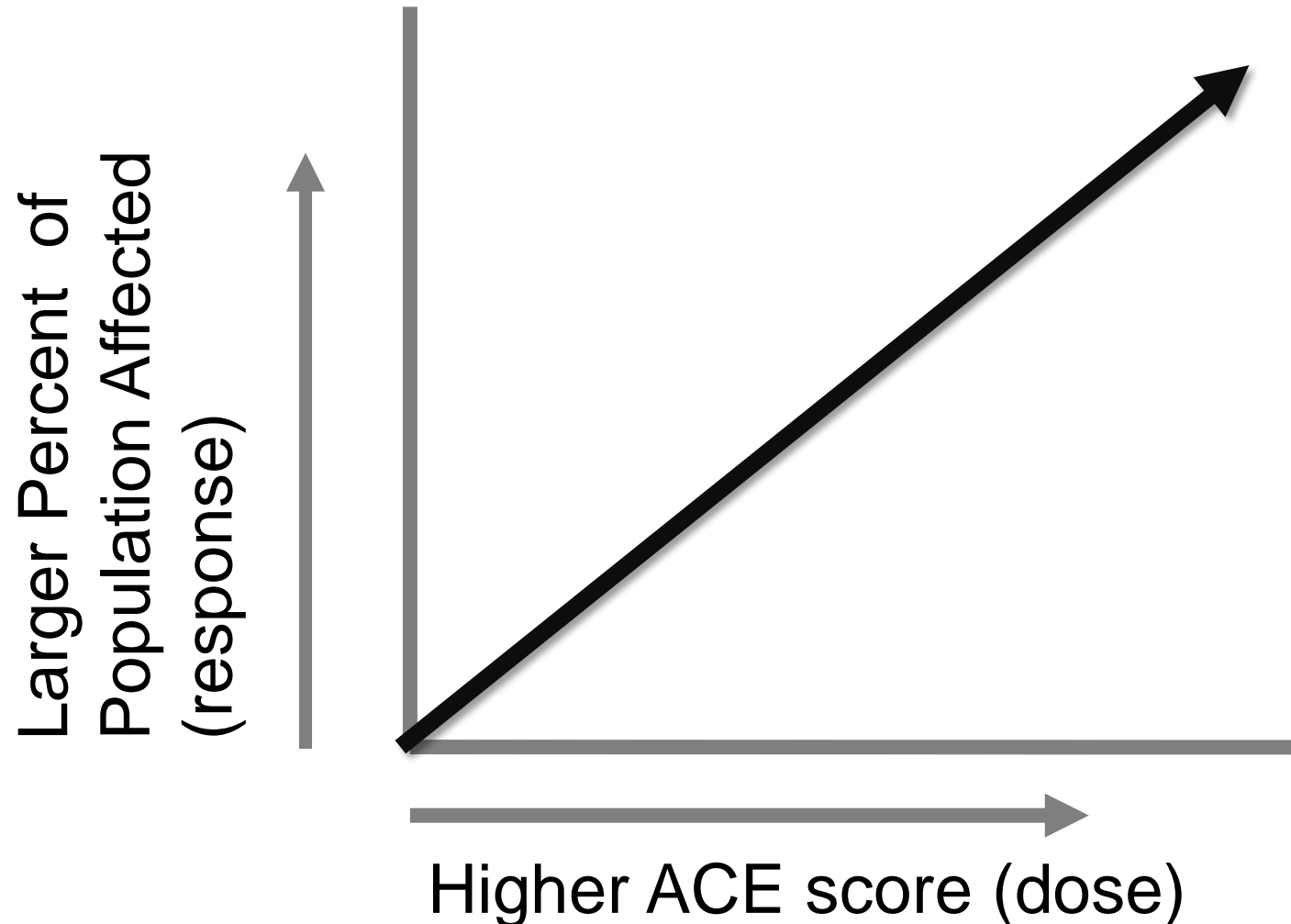


Majority ≥ 1
21% ≥ 3
5.5% ≥ 6

Note: both more people
with ACE Score of 0 and
more people with ACE
Score of ≥ 6

■ 0 ■ 1 to 2 ■ 3 to 5 ■ ≥ 6

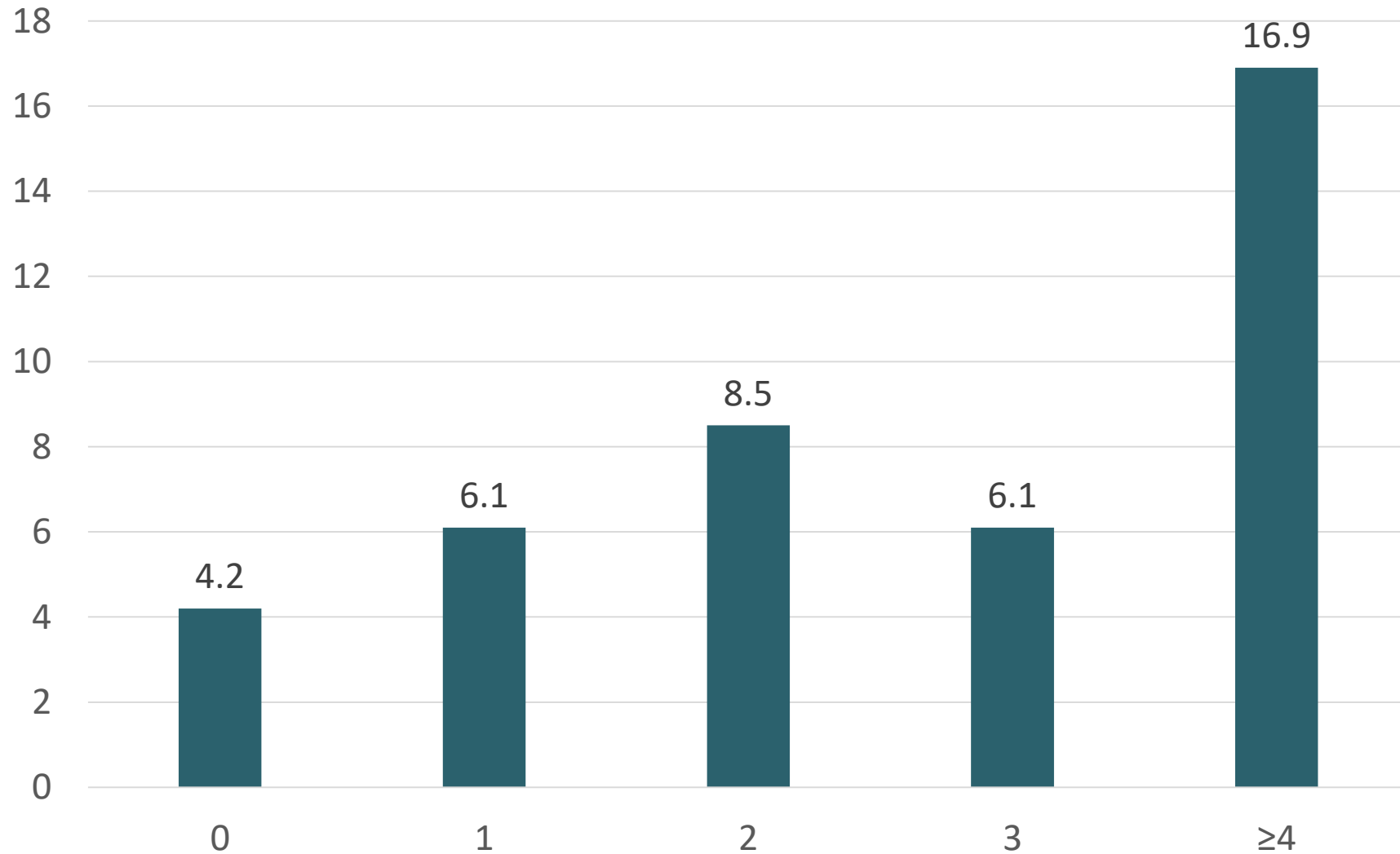
ACE: Cumulative Effect



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

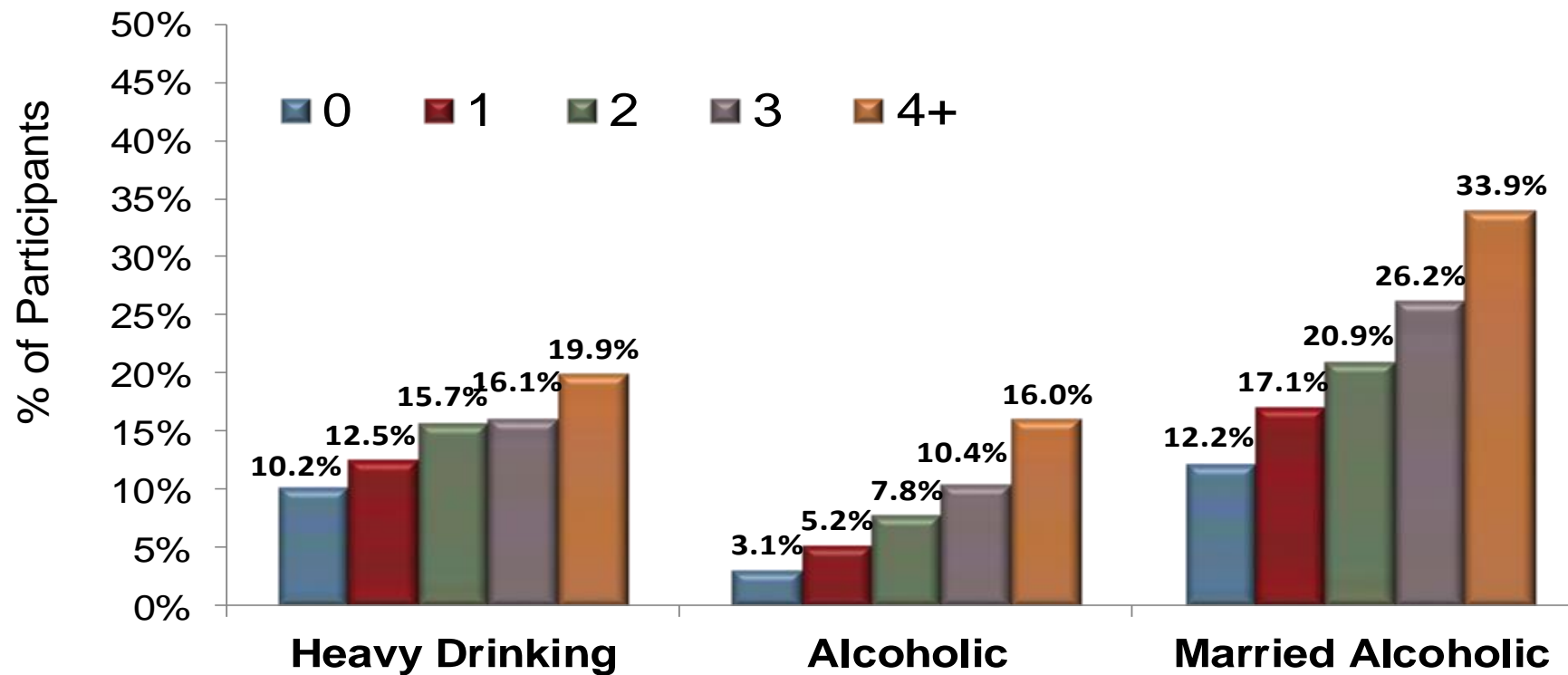
A classic causal
relationship
More ACE = more
health problems

Started Drinking Alcohol Prior to Age 15

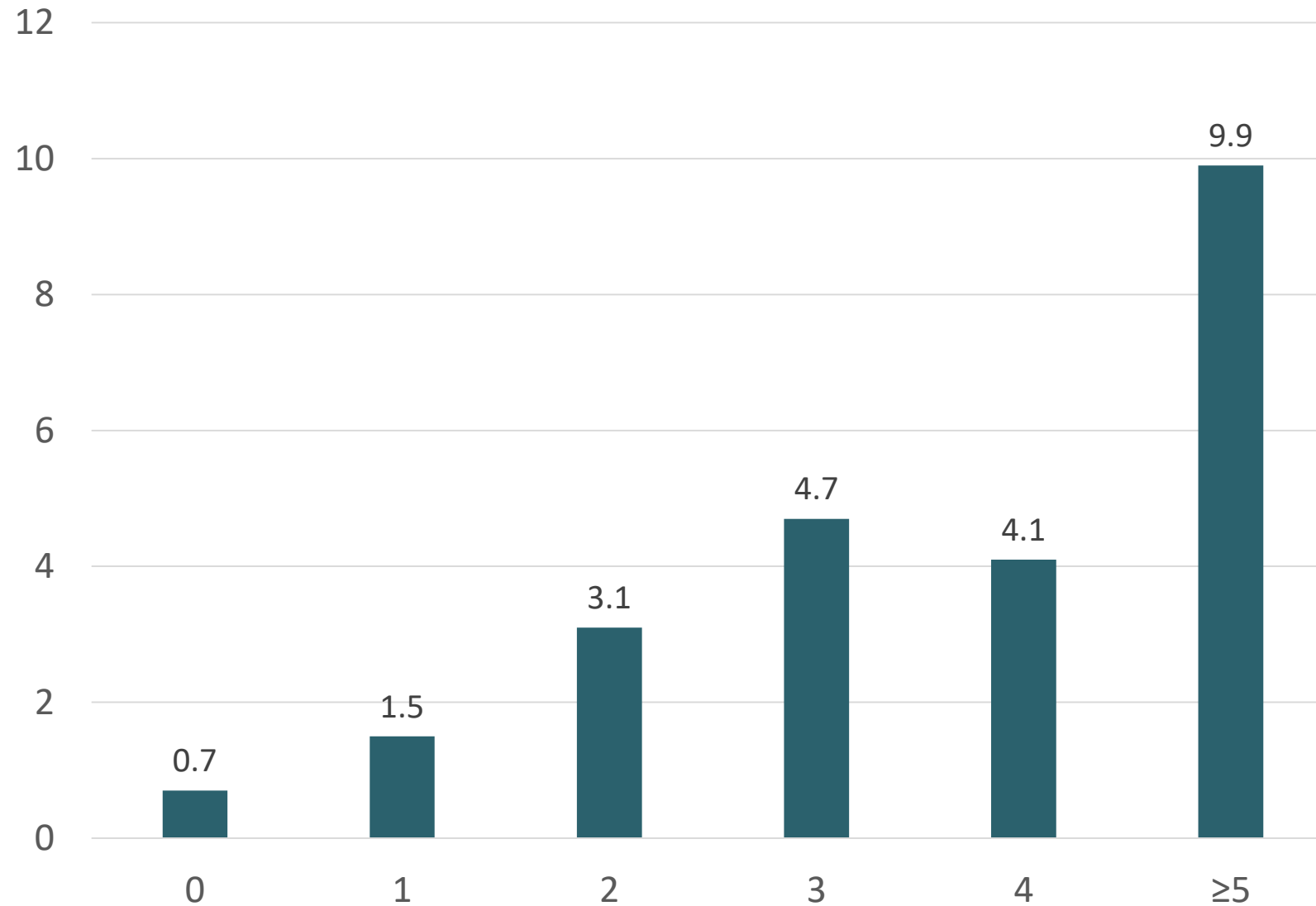


Adult Alcohol Use

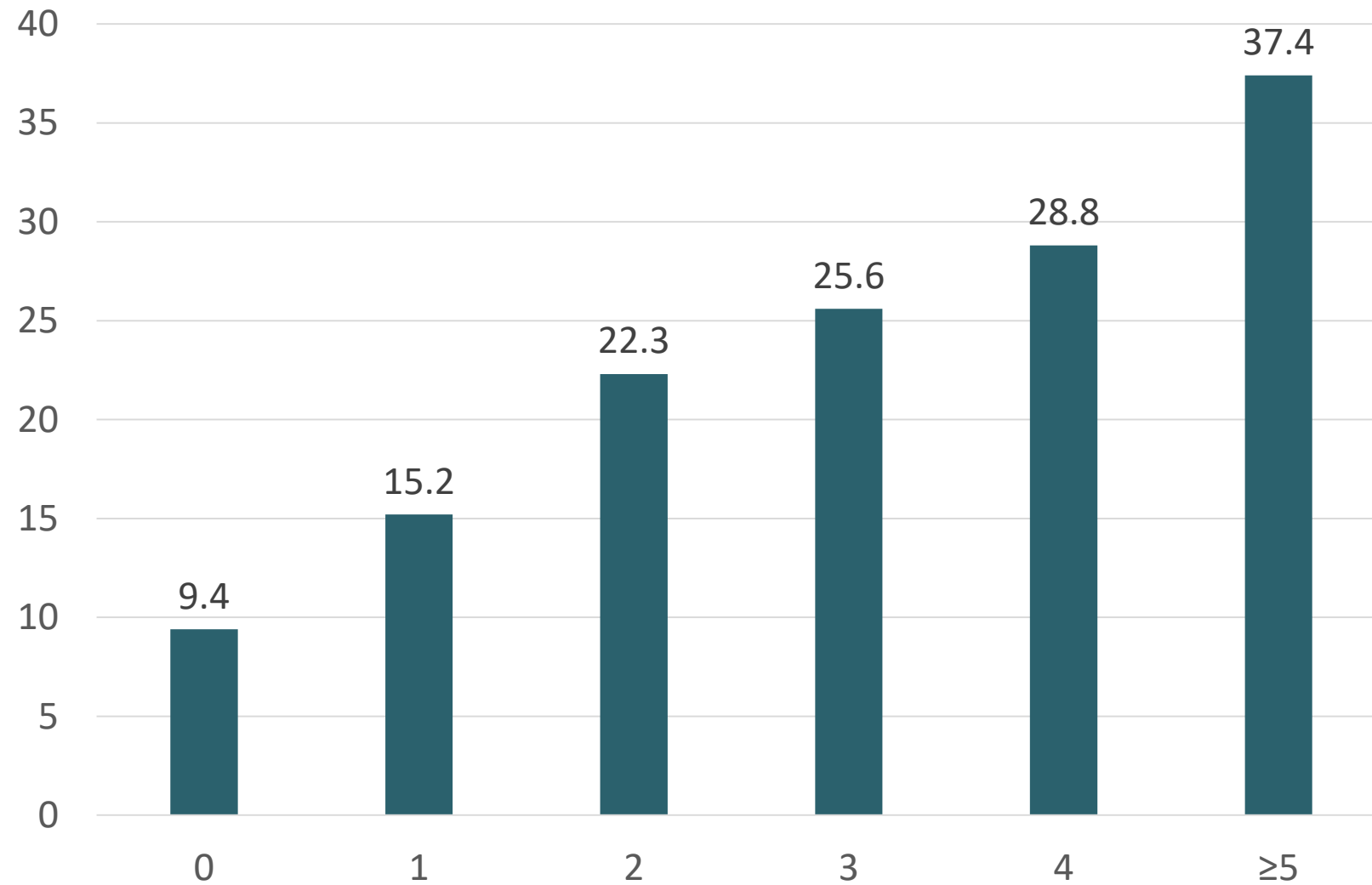
Percentage of Participants' reported Heavy Drinking, Alcoholism, and Marrying an Alcoholic by ACE score



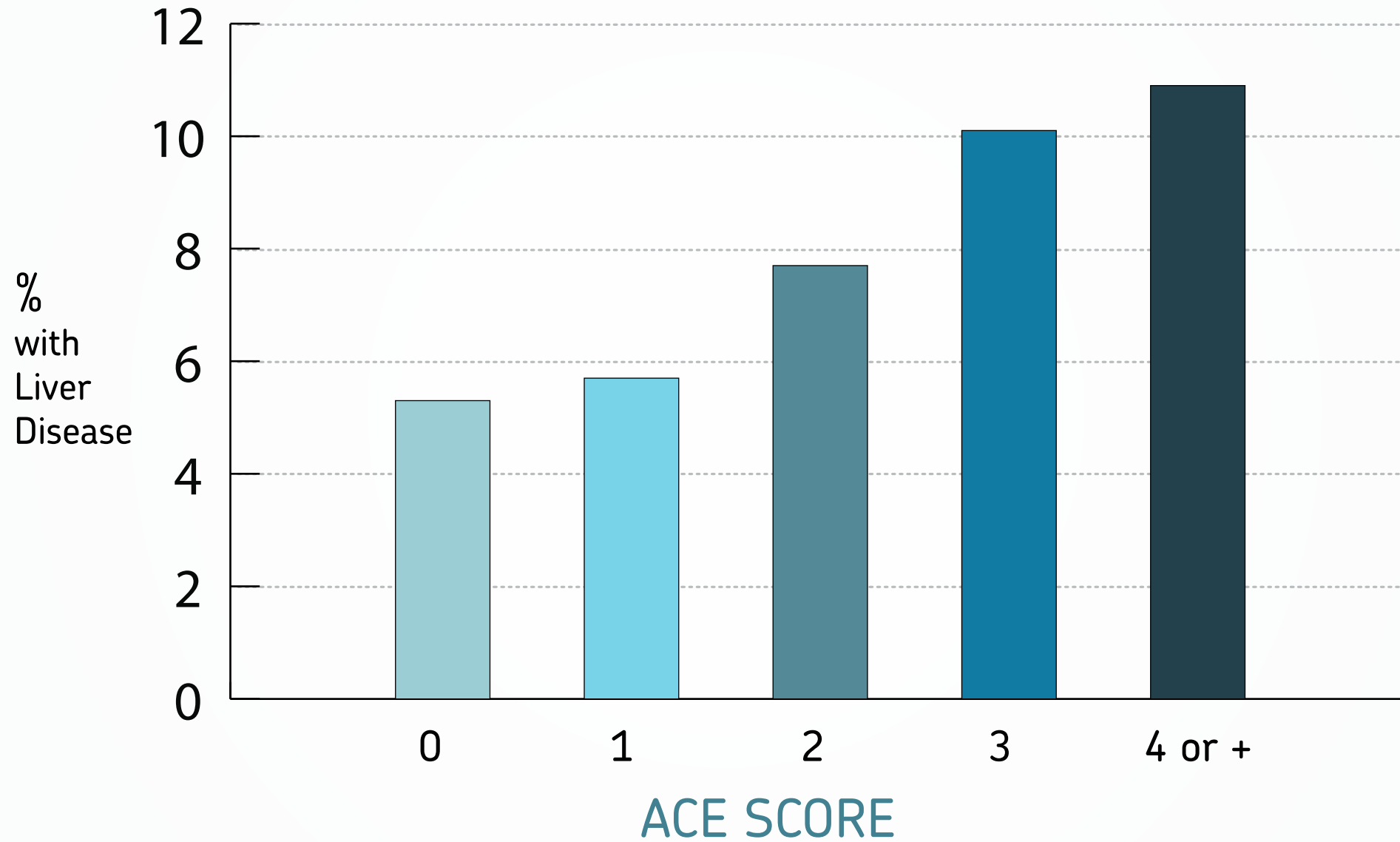
Illicit Drug Use Before Age 15



Illicit Drug Use as an Adult



ACE Score and Liver Disease



ACEs Drive Expensive Health Conditions

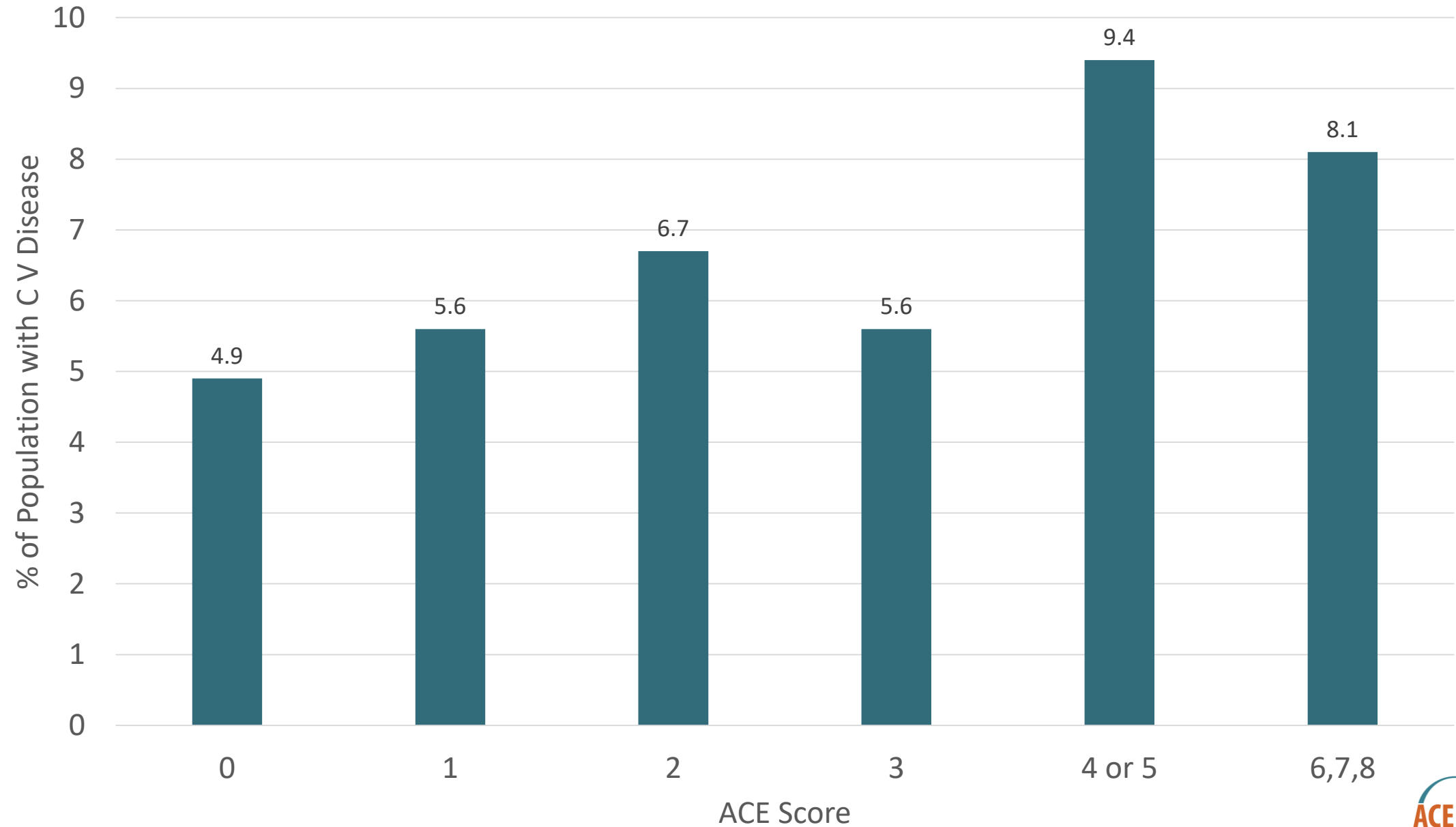
The most expensive health conditions:

1. Heart disease
2. Cancer
3. Trauma
4. Mental disorders
5. Pulmonary conditions

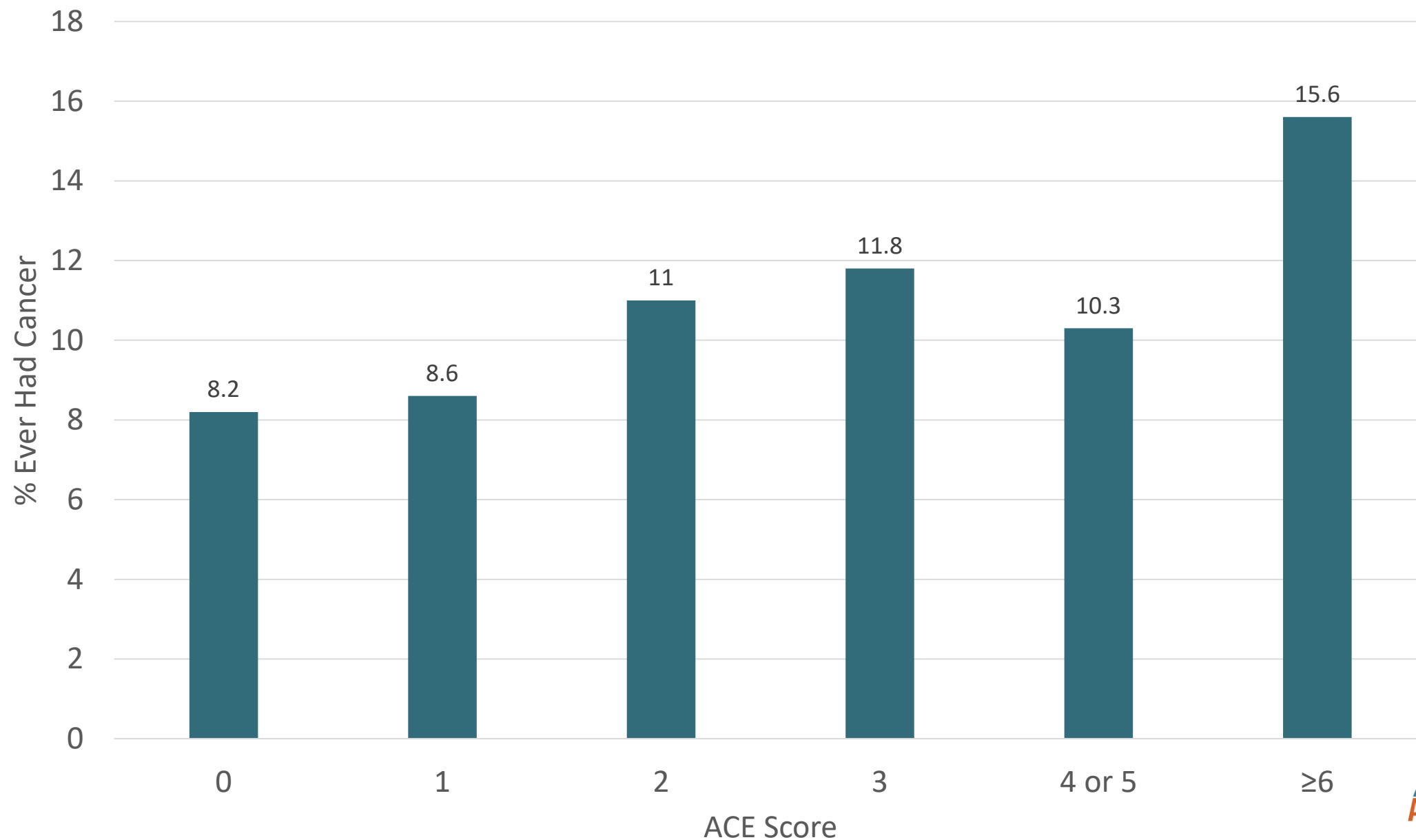
Heart disease and trauma ranked 1st and 2nd for total spending

Cancer ranked 1st, heart disease 2nd highest for per-person costs

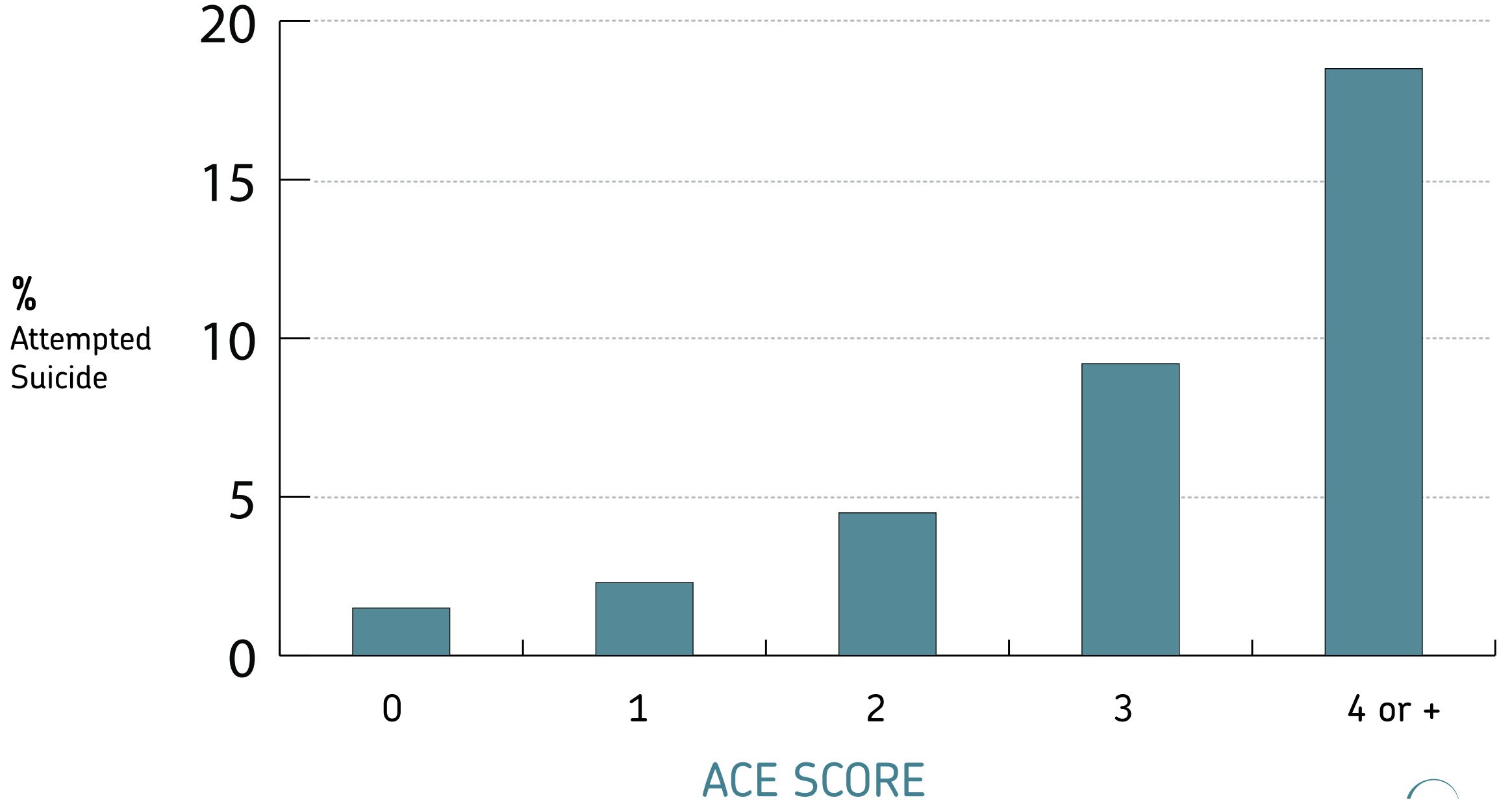
Cardio Vascular Disease



History of Cancer



ACEs & Suicide Attempt



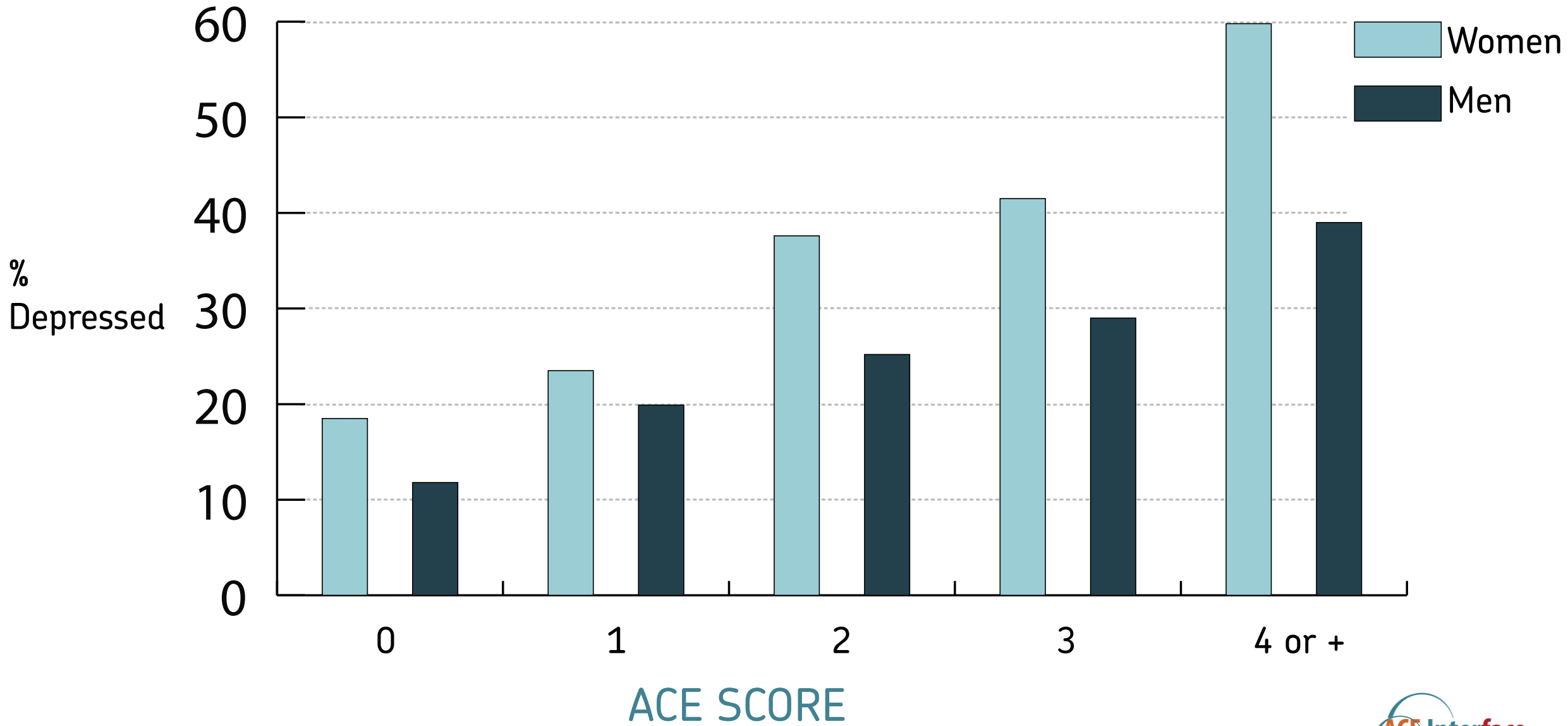
Common Chronic Conditions

25% of the U.S. population has one or more of five major chronic conditions:

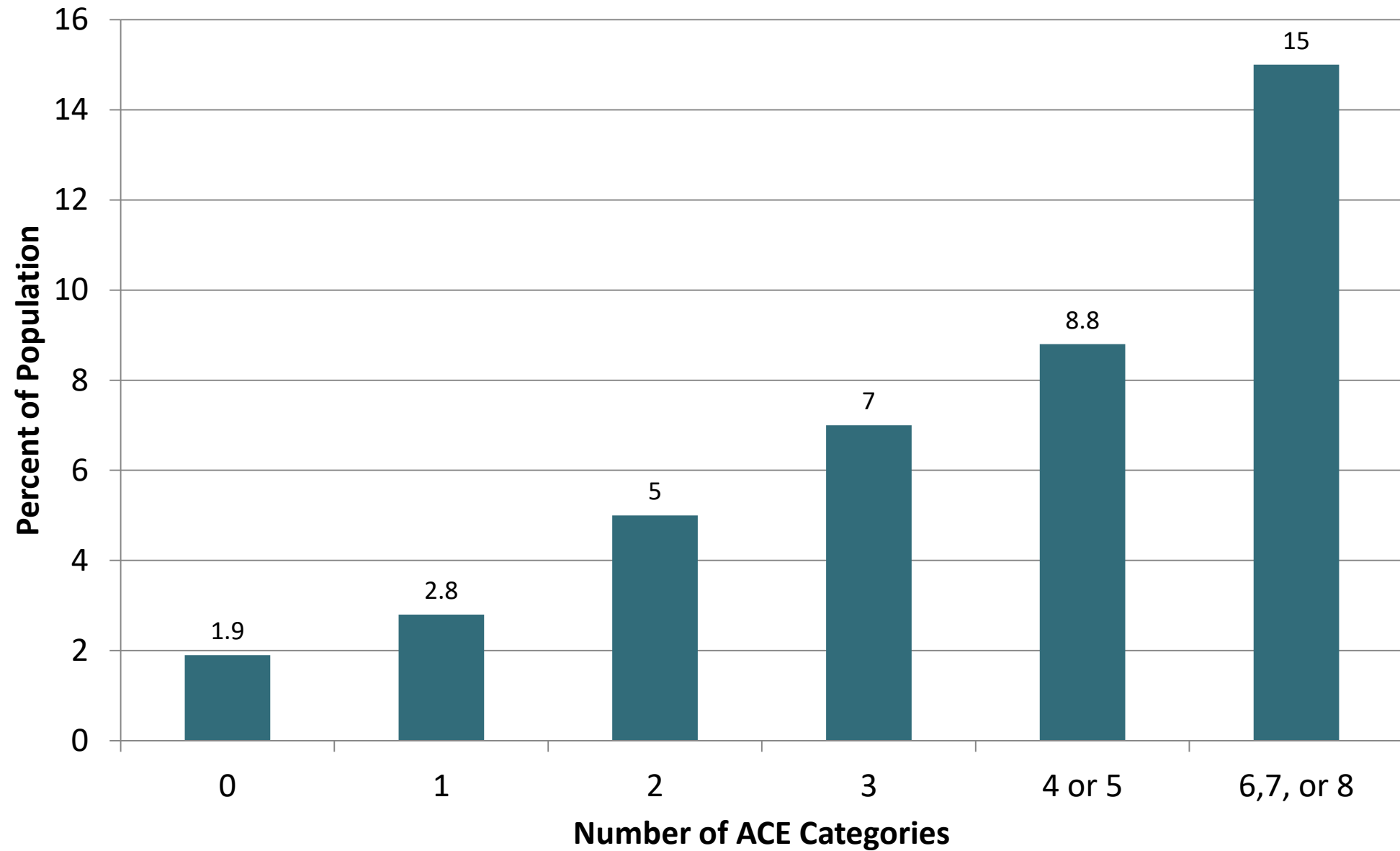
1. Mood disorders
2. Diabetes
3. Heart disease
4. Asthma
5. Hypertension

Expenses for people with one chronic condition twice as great as for those without any chronic conditions.

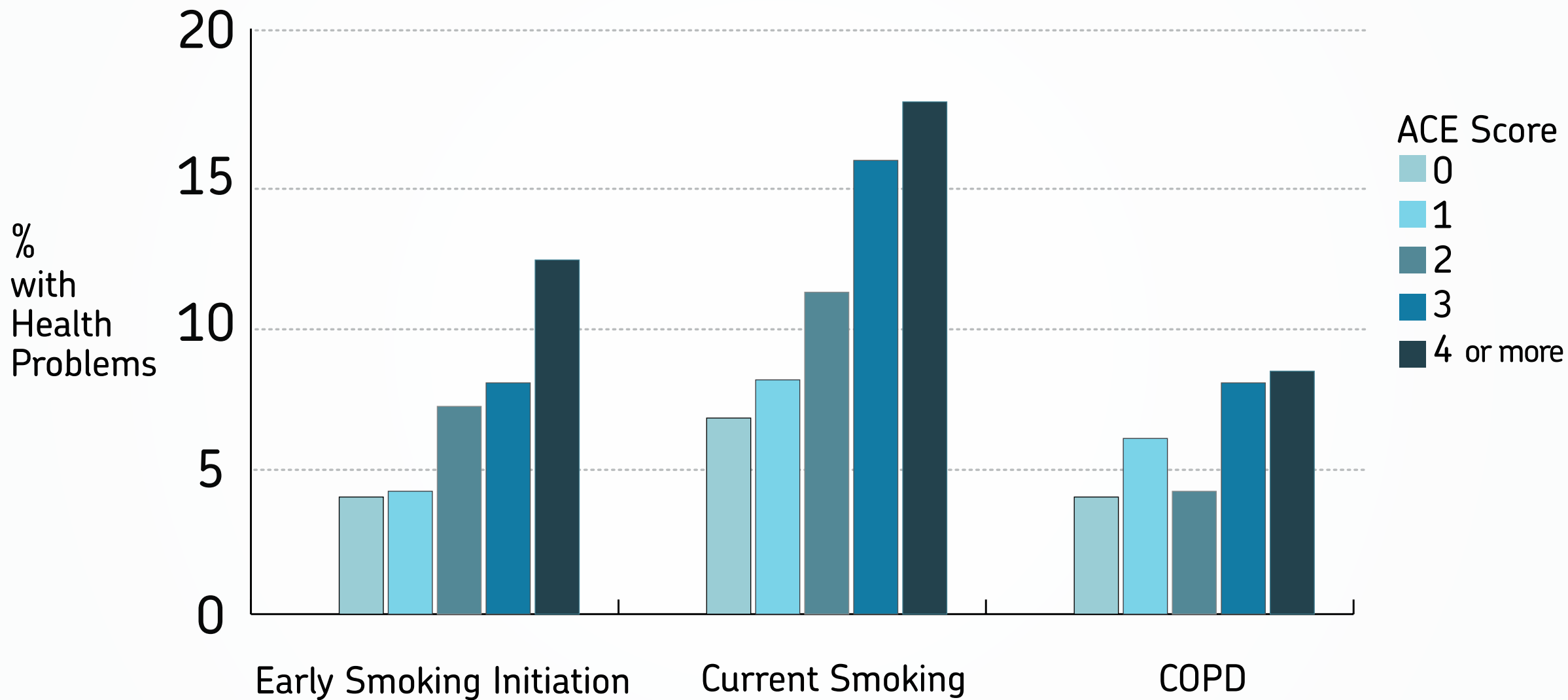
ACEs & Depression



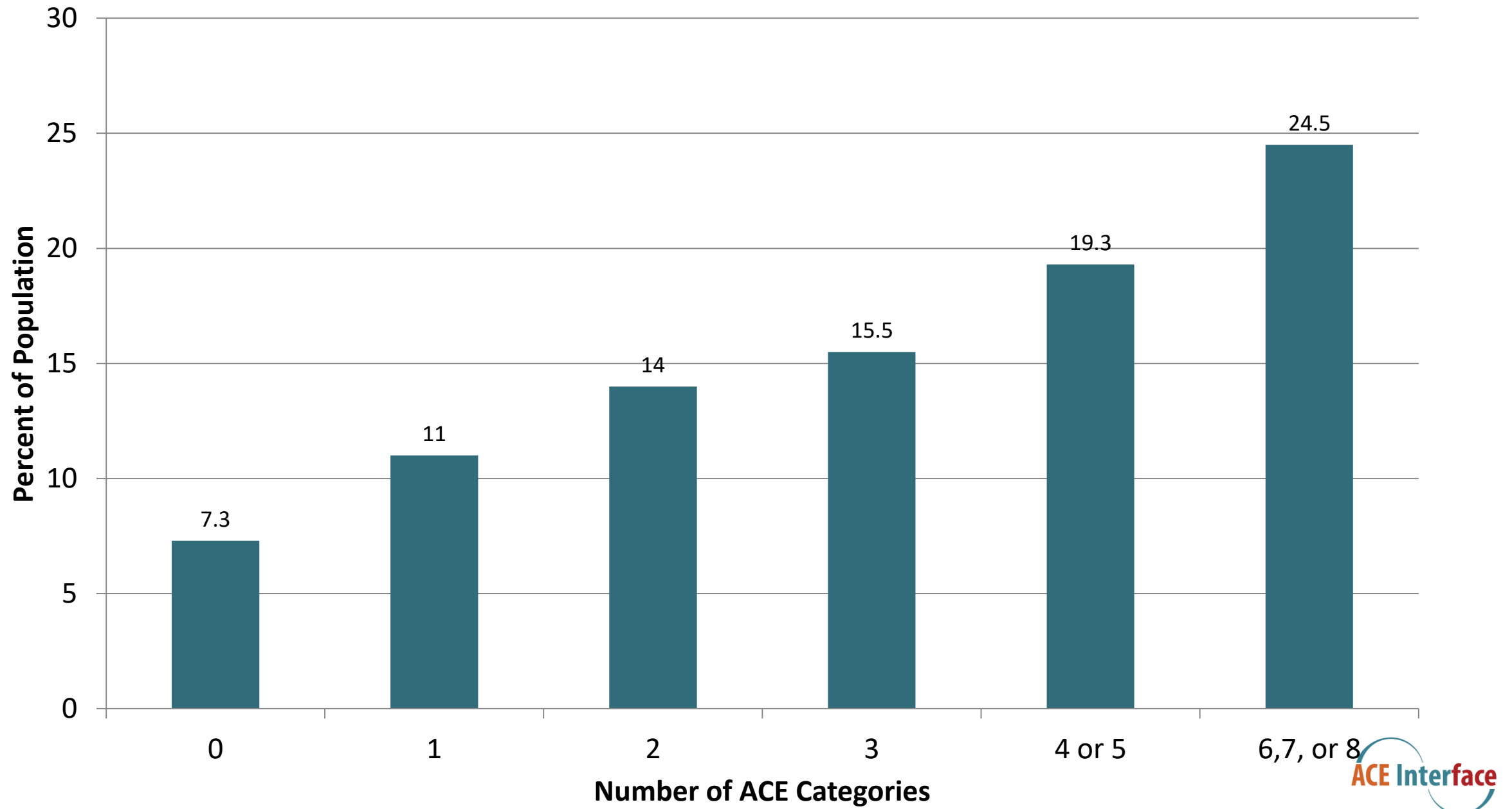
Anxiety



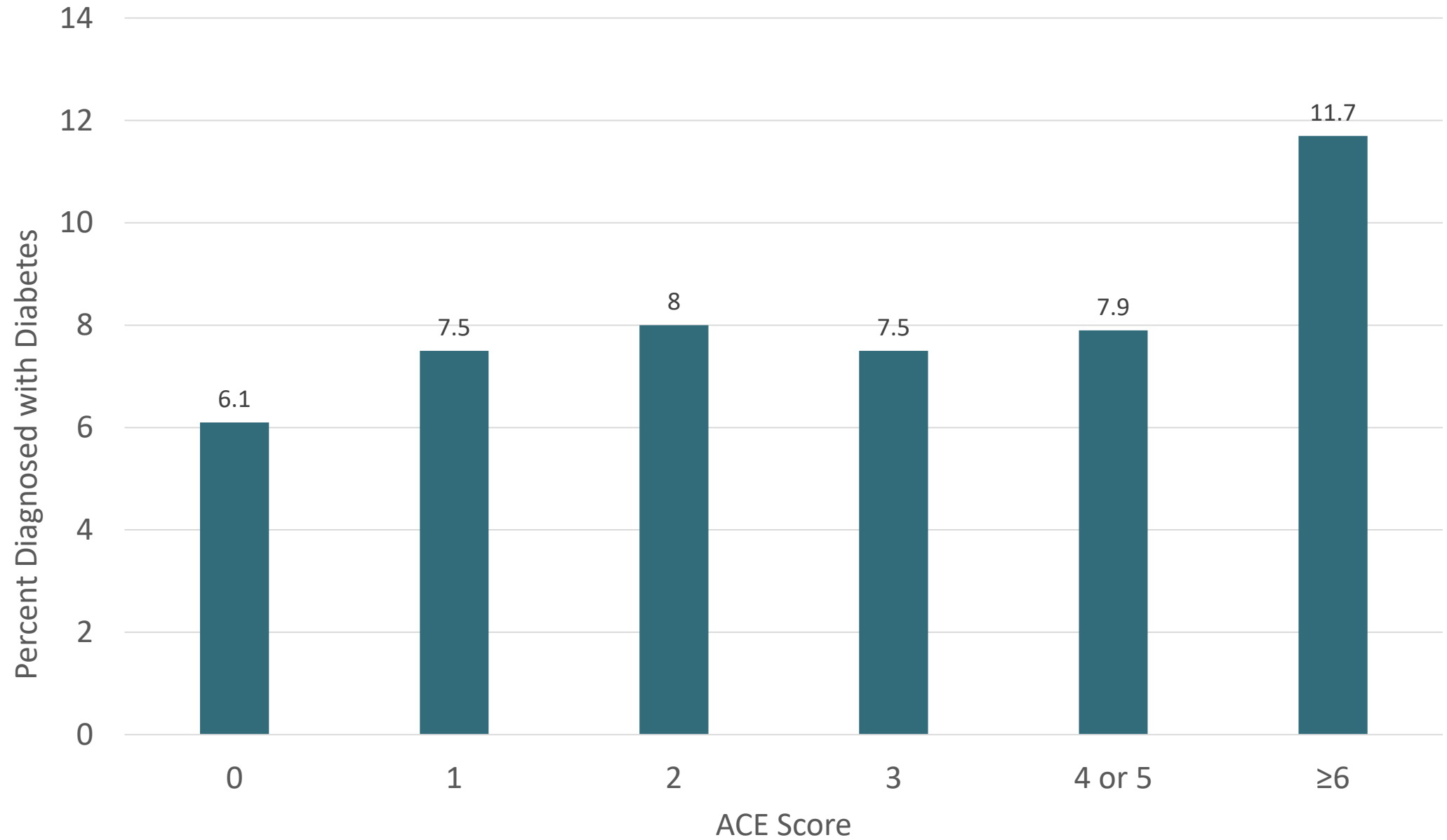
ACEs, Smoking and Lung Disease



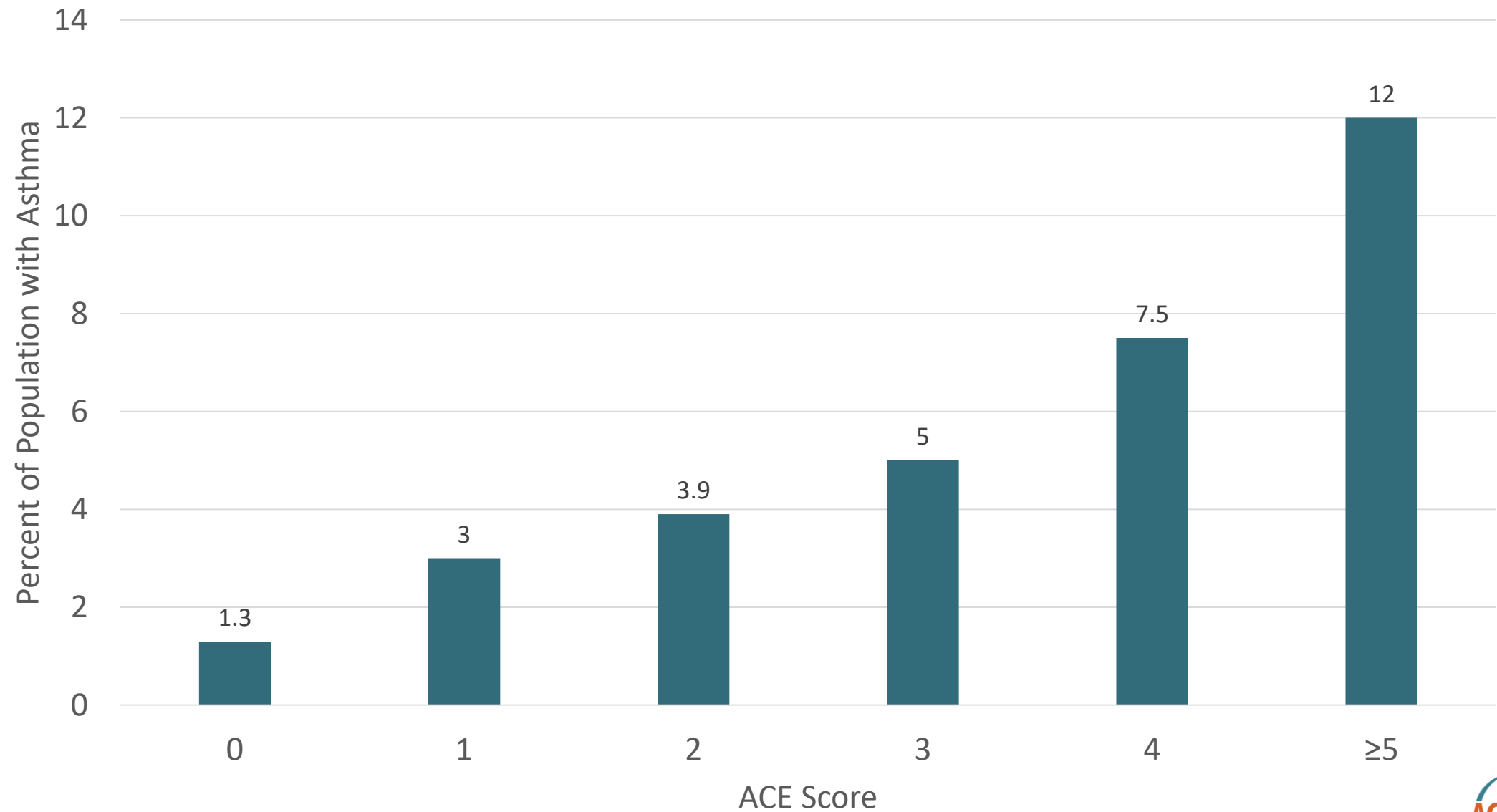
Treatment: Mental Health Condition



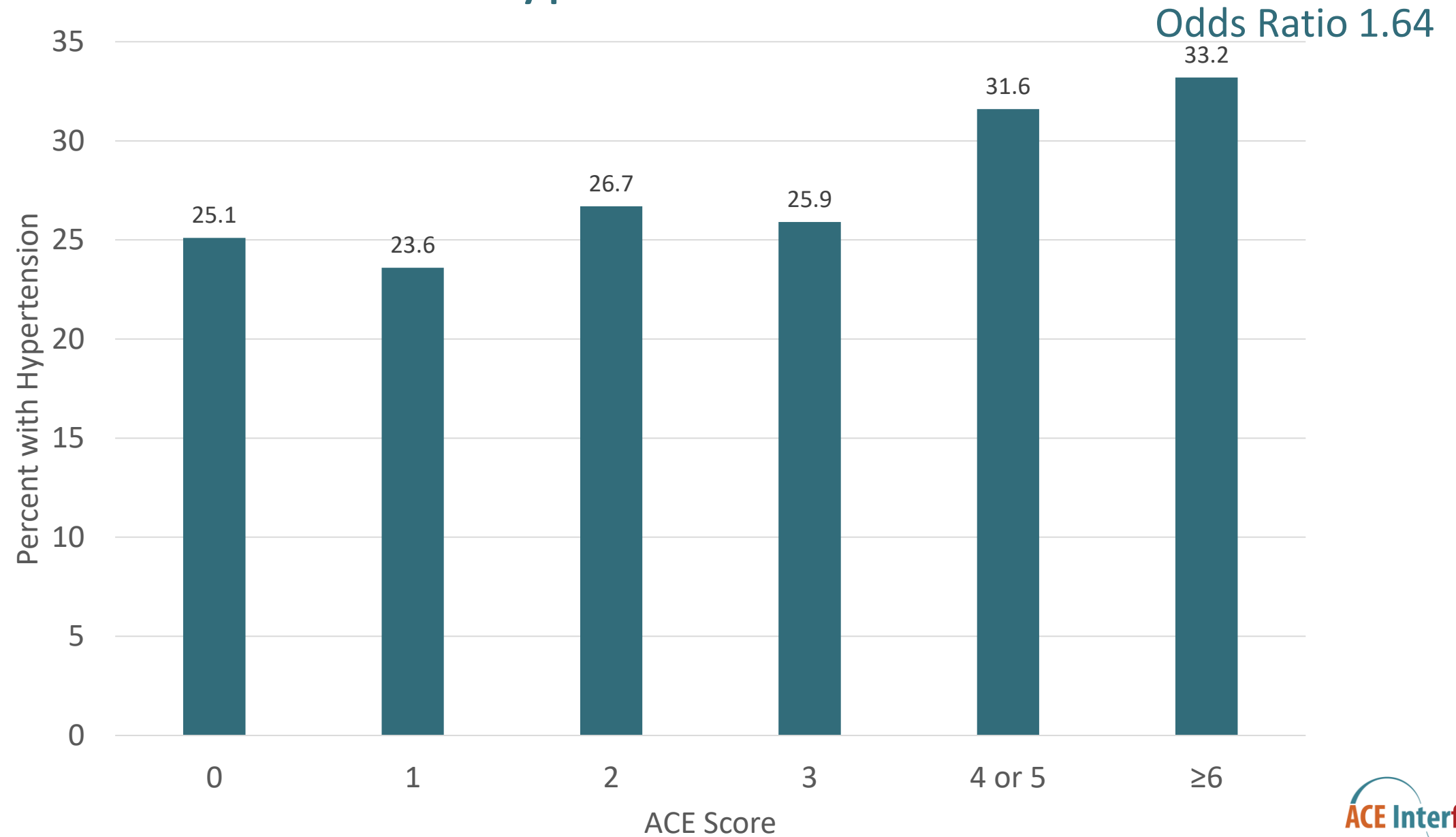
Diabetes



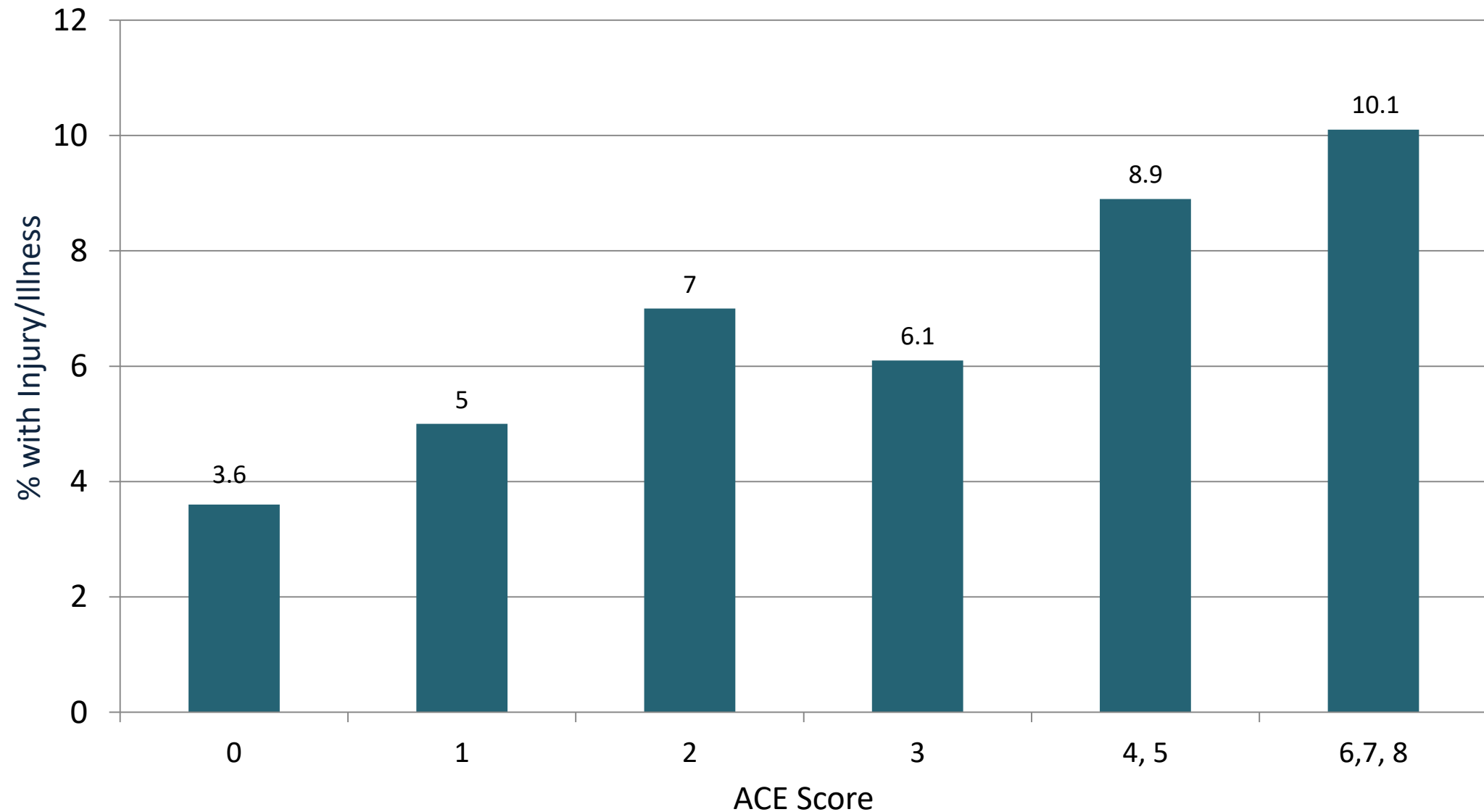
Asthma

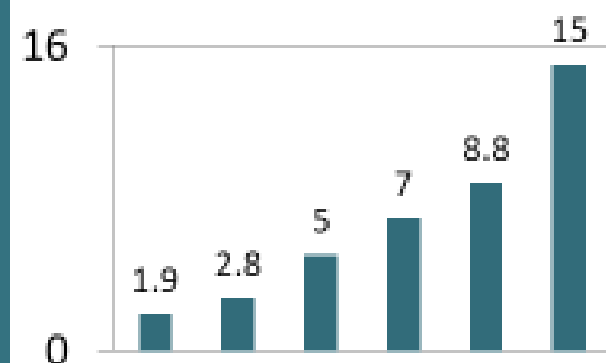
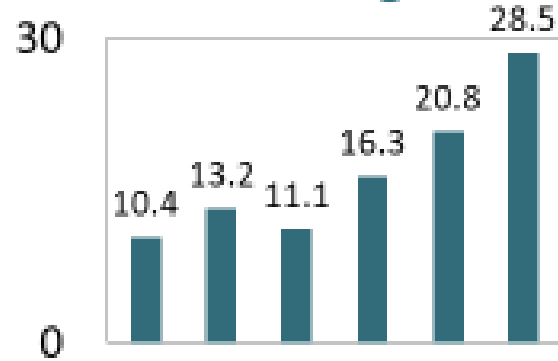
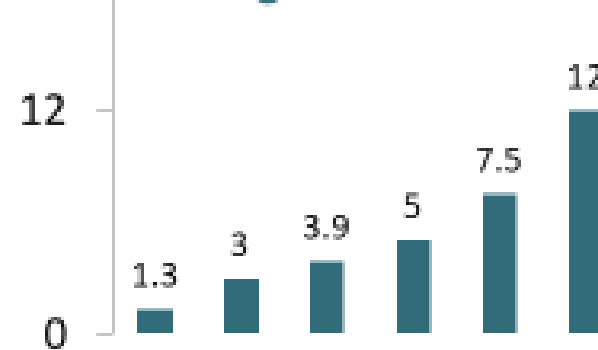
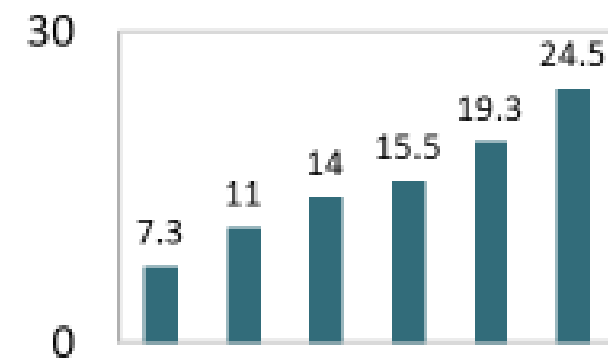
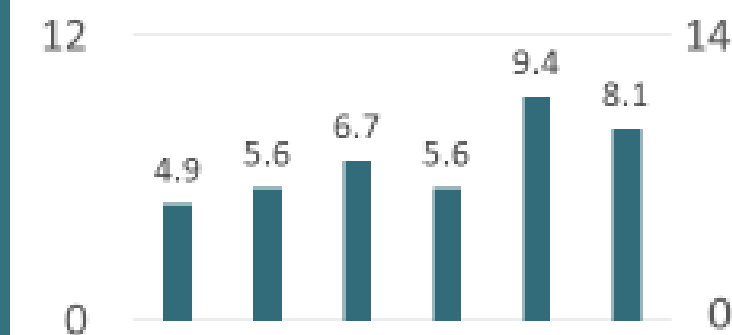
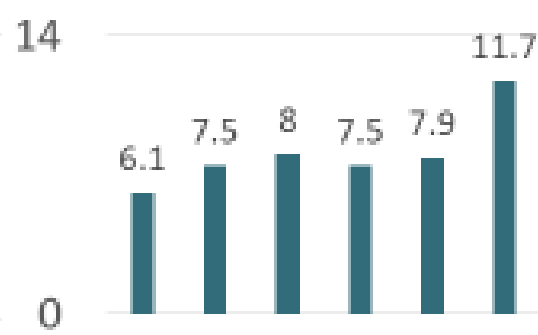
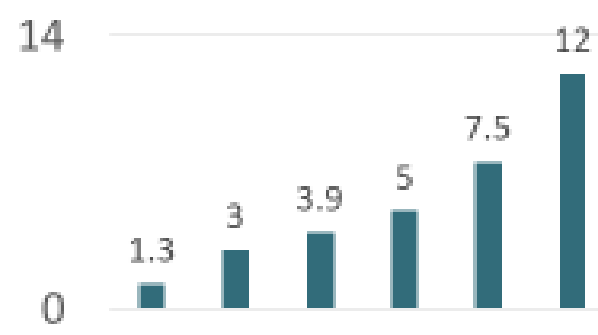
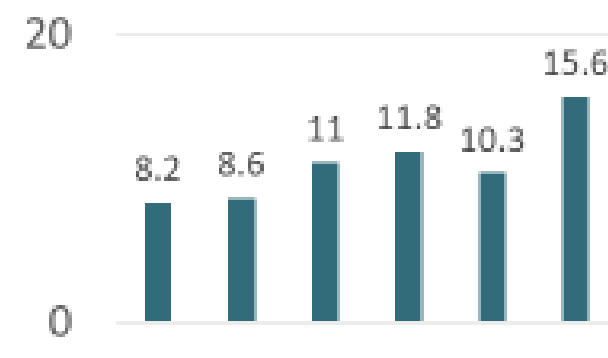
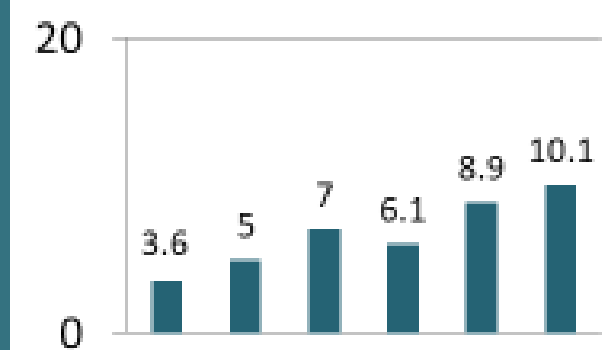
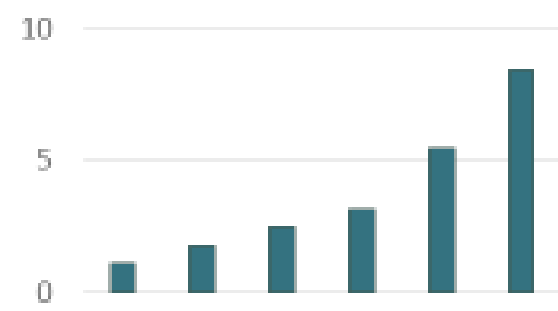
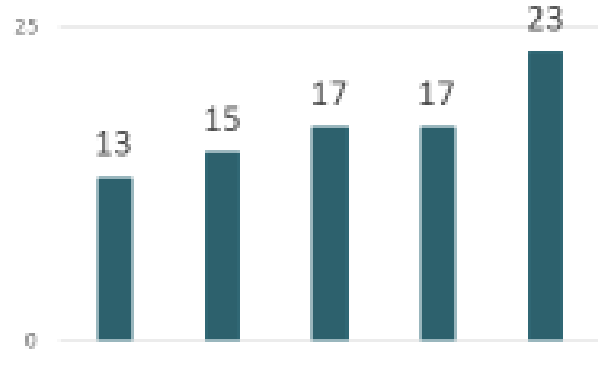
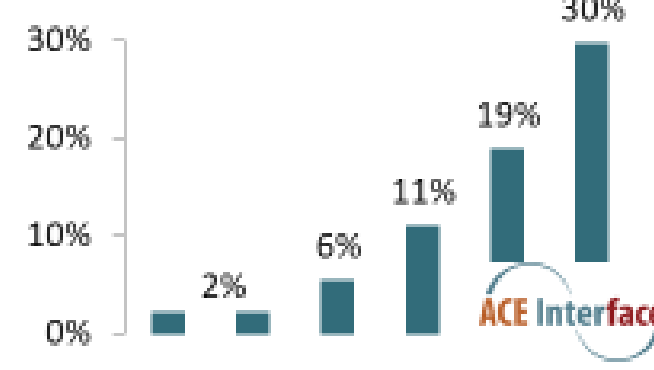


Hypertension



Work-Related Injury/Illness in Past Year



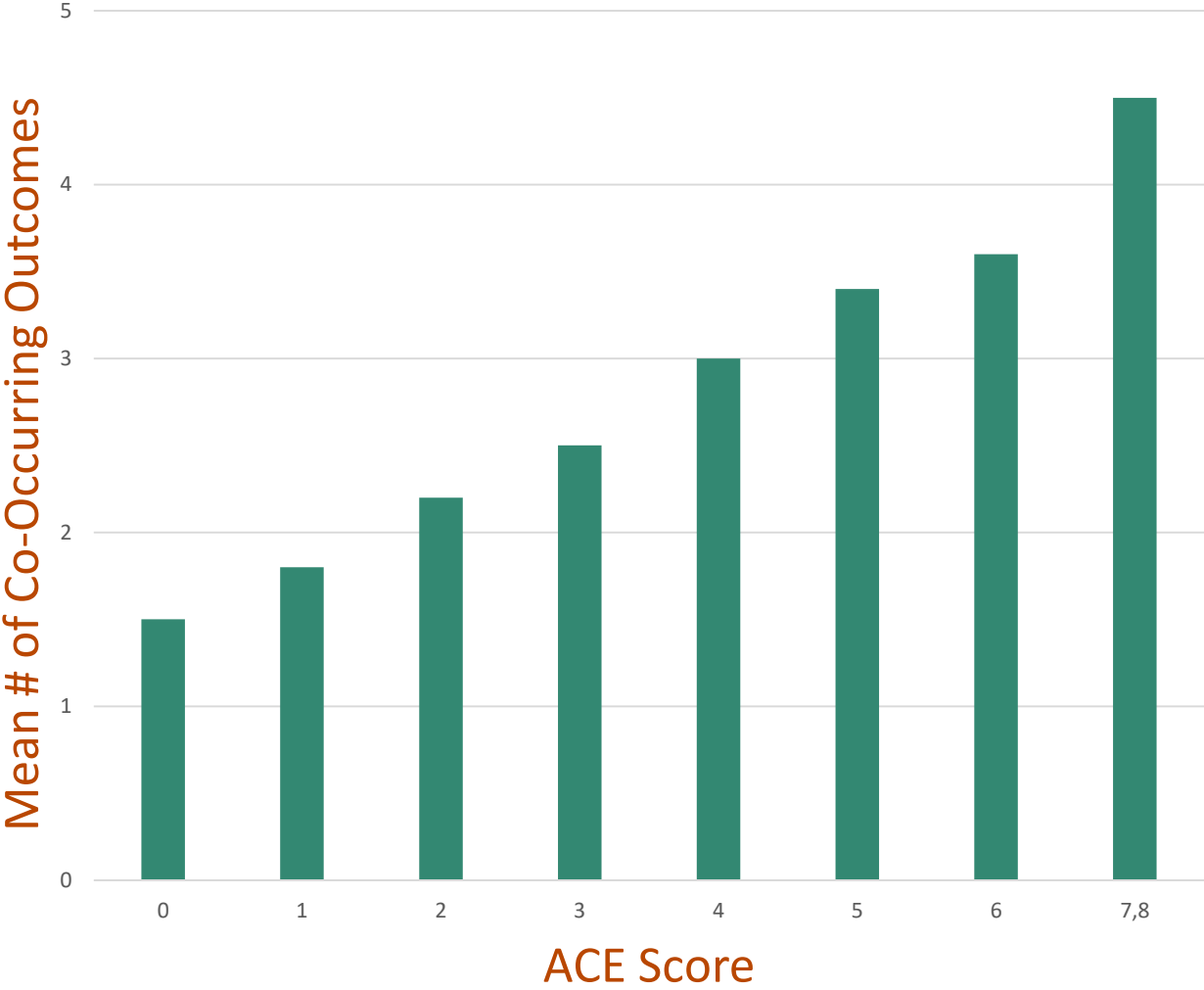
Anxiety**Smoking****Drug Problem****MH Treatment****Cardio Vascular Disease****Diabetes****Asthma****Cancer****Work Injury/Illness****Missed 15 of 30 Work Days (MH)****Unemployed****Homeless**

Co-Occurring Chronic Conditions

People with chronic conditions tend to have other conditions and illnesses.

When the other illnesses are added in, total expenses for people with five major chronic conditions rise to 49% percent of total health care costs.

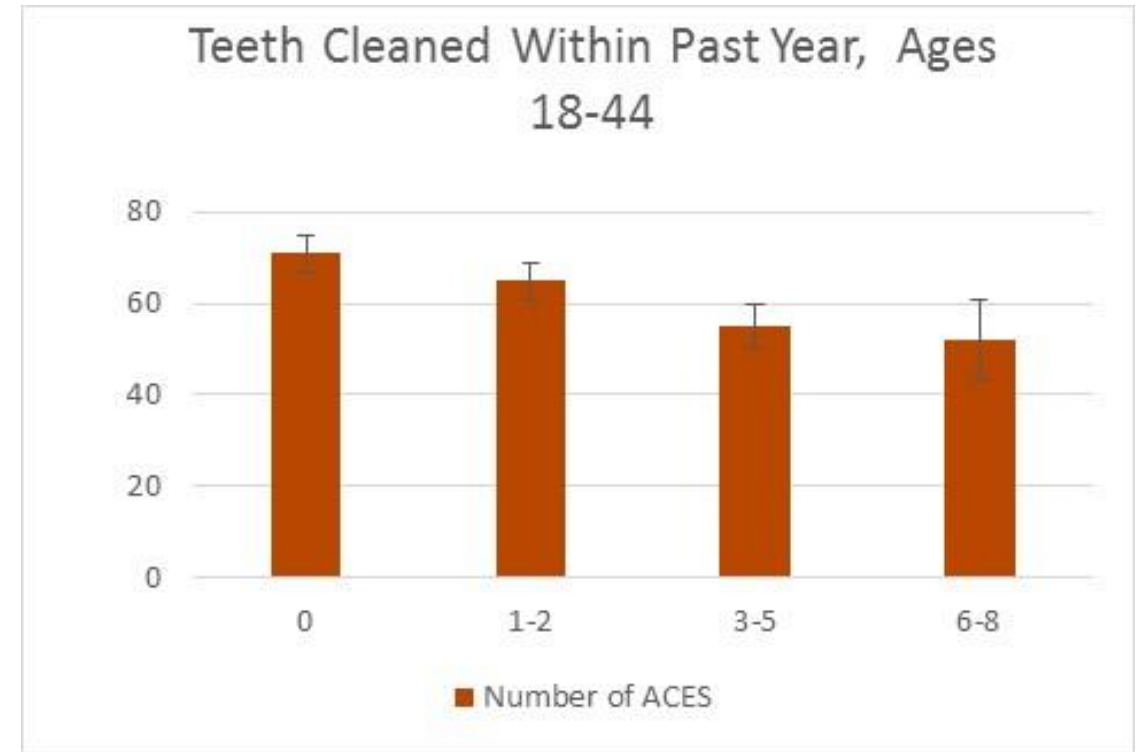
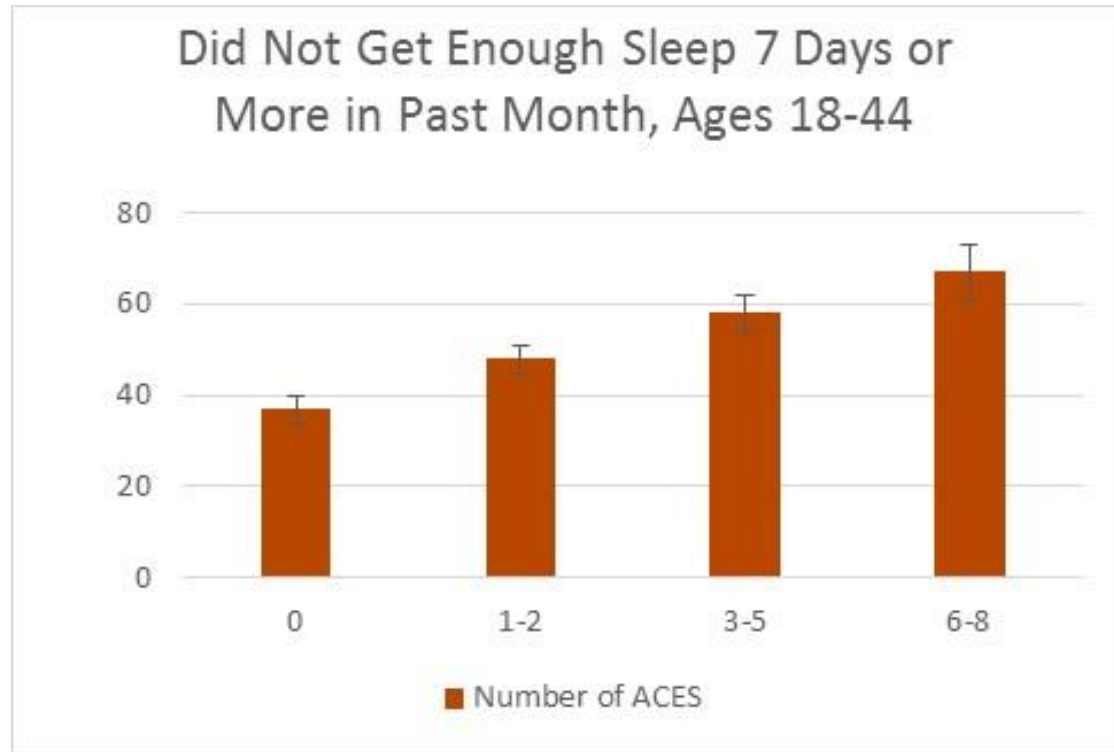
ACEs and Co-Occurring Problems



- Health & Social Problems**
- Panic Reactions
 - Depression
 - Anxiety
 - Hallucinations
 - Sleep Disturbances
 - Severe Obesity
 - Pain
 - Smoking
 - Alcoholism
 - Illicit Drug Use
 - IV Drug Use
 - Early Intercourse
 - Promiscuity
 - Sexual Dissatisfaction
 - Amnesia (Childhood)
 - Problems with Anger
 - Perpetration of Family Violence
- Affect Regulation**
- Somatic Issues**
- Substance Use**
- Sexuality**
- Memory**
- Arousal**



ACEs and Self Care

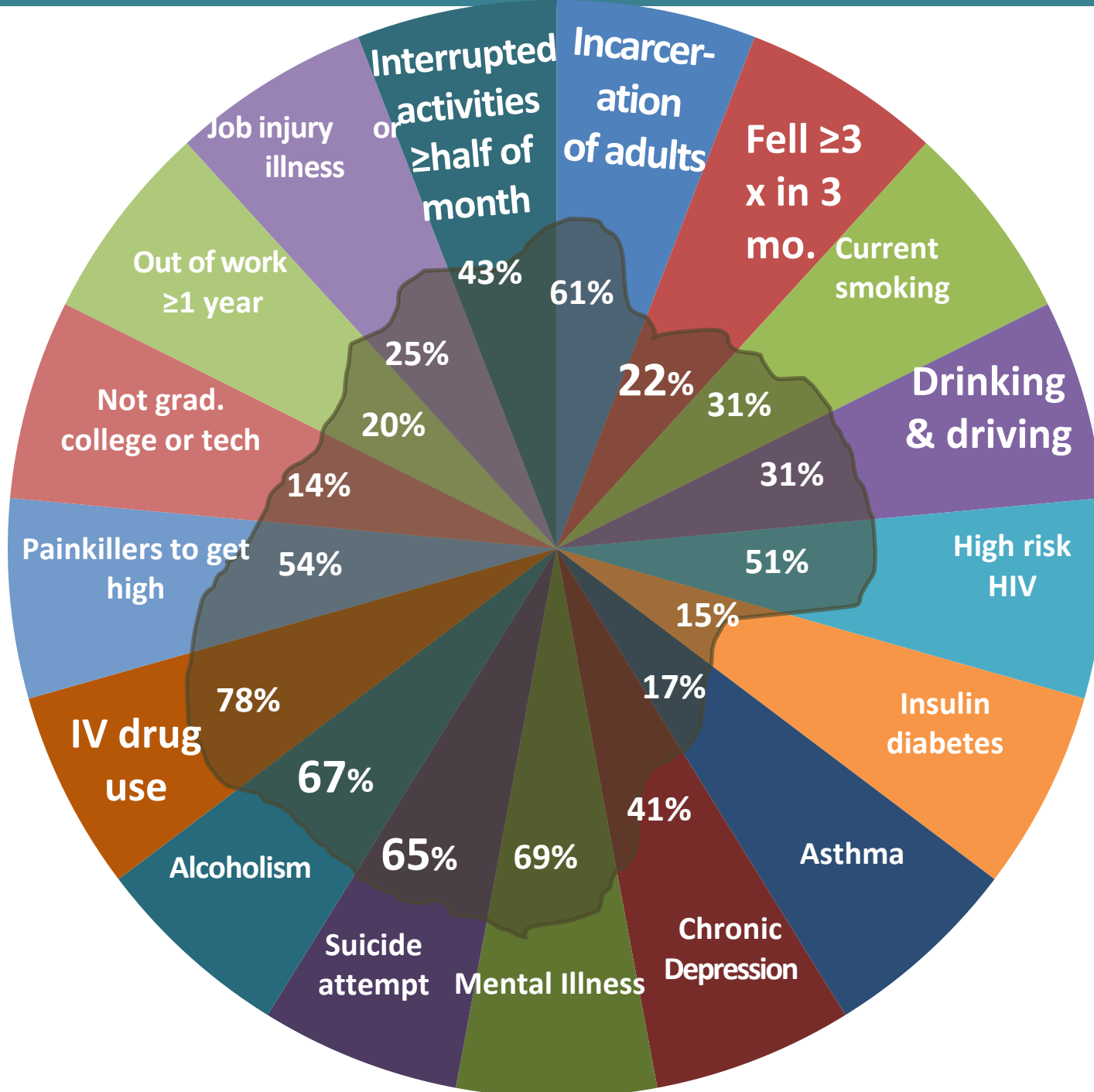


People with ACE Scores of 4-8 are more than twice as likely than people with ACE Scores of 0-1 to frequently be limited in ability to engage in self-care.



ACE Score is
Proxy for
“Dose” of
Stress During
Childhood

The Magnitude of the Solution



Core Protective Systems

Capabilities

Attachment
&
Belonging

Community
Culture
Spirituality

“Nurturing the healthy development of these protective systems affords the most important preparation or ‘inoculation’ for overcoming potential threats and adversities in human development. Similarly, damage or destruction of these systems has dire consequences for the positive adaptive capacity of individuals.”

Ann Masten, 2009

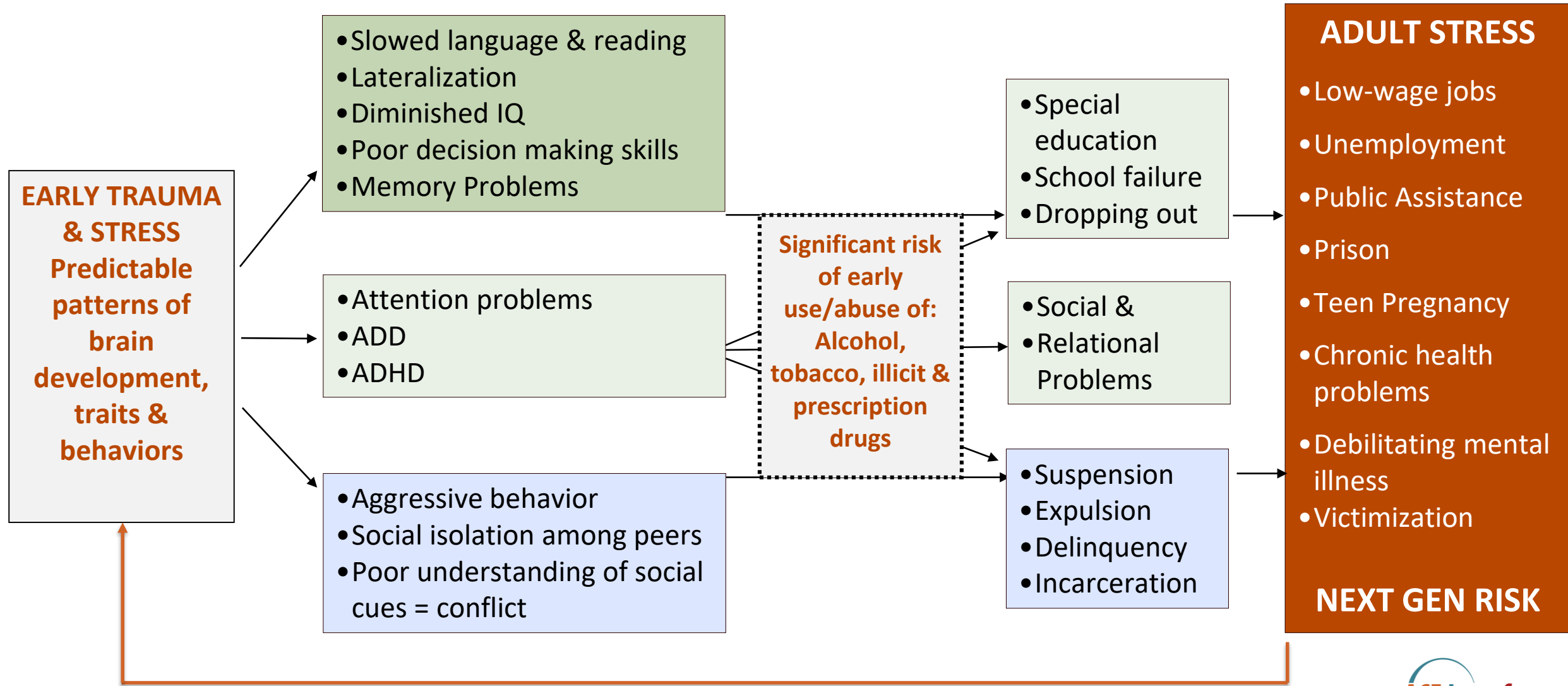
Discussion

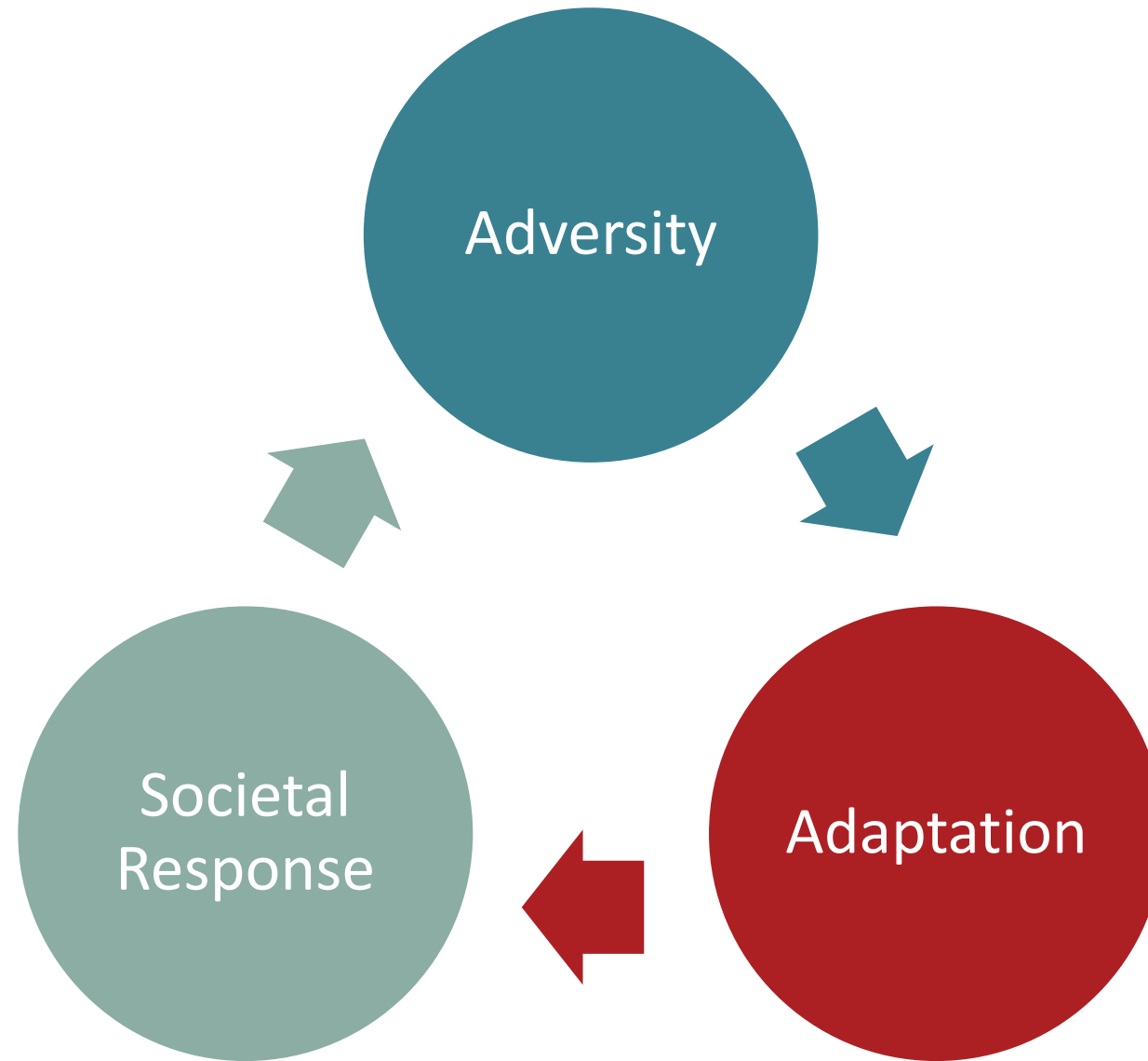
What challenges in our work likely have origins in childhood adversity or related factors?

Unique Experiences of the World



Progressive Nature of Adversity





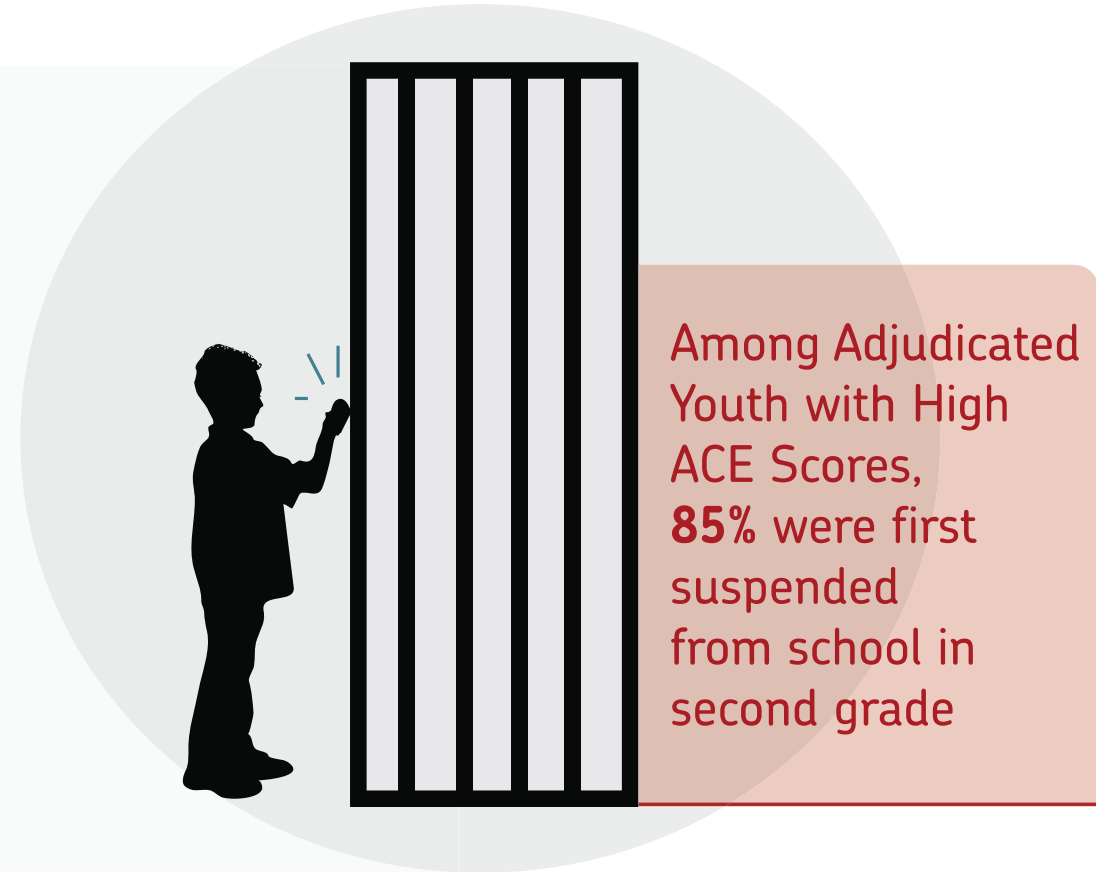
Results Oriented Decision Making: Data



Not Safe at Home



Not Welcome at School



Functional Days

POORHLTH	During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?
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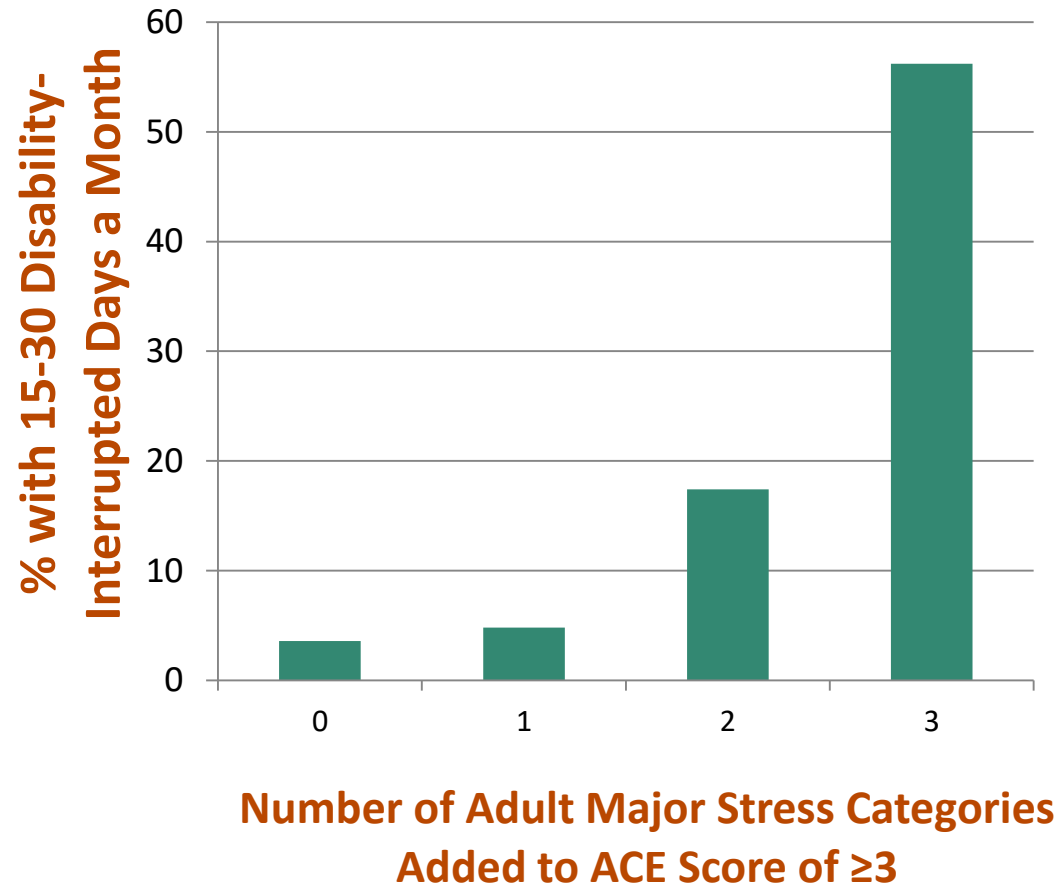
Adult Adversity Compounds Effects

Adults with ≥ 3 ACEs

Plus

Major Stress Categories:

1. Homelessness
2. Incarceration
3. Chronic illness
4. Separation/Divorce
5. Severe Depression
6. Work-related Injury/
Illness



Parent ACE Scores Predict Child ACE Scores

Children of Parents with ACE Scores ≥ 4 , are:

1. 6.3x more likely to experience household substance abuse
2. 10.4x more likely to experience homelessness
3. 12.7x more likely to experience neglect
4. 44x more likely to be exposed to intimate partner violence

ACEs Are Not Destiny

People affected by ACEs are becoming the leaders of
Self-Healing Communities



“What’s predictable is preventable.”

Dr. Robert Anda, Co-principal investigator of The ACE Study

“Restoring relationships and community is central to restoring well-being”

- Language gives us the power to change ourselves and others by communicating our experiences and finding common meaning
- We have the ability to regulate our own physiology with basic activities: breathing, moving, touching, tuning to others
- We can change social conditions and create environments where people can feel safe and thrive

Discussion

How is our thinking already informed by NEAR Science?

What are we already doing well?

Designing high leverage solutions

Different Types of Problems

Simple

- Can be diagnosed easily
- There are experts who know solutions
- There is, or could be a routine response system (e.g. 911)

Complex Adaptive

- Time delay, interrelatedness, etc. hinder diagnosis
- No experts – emerging or evolving factors & context
- No routine

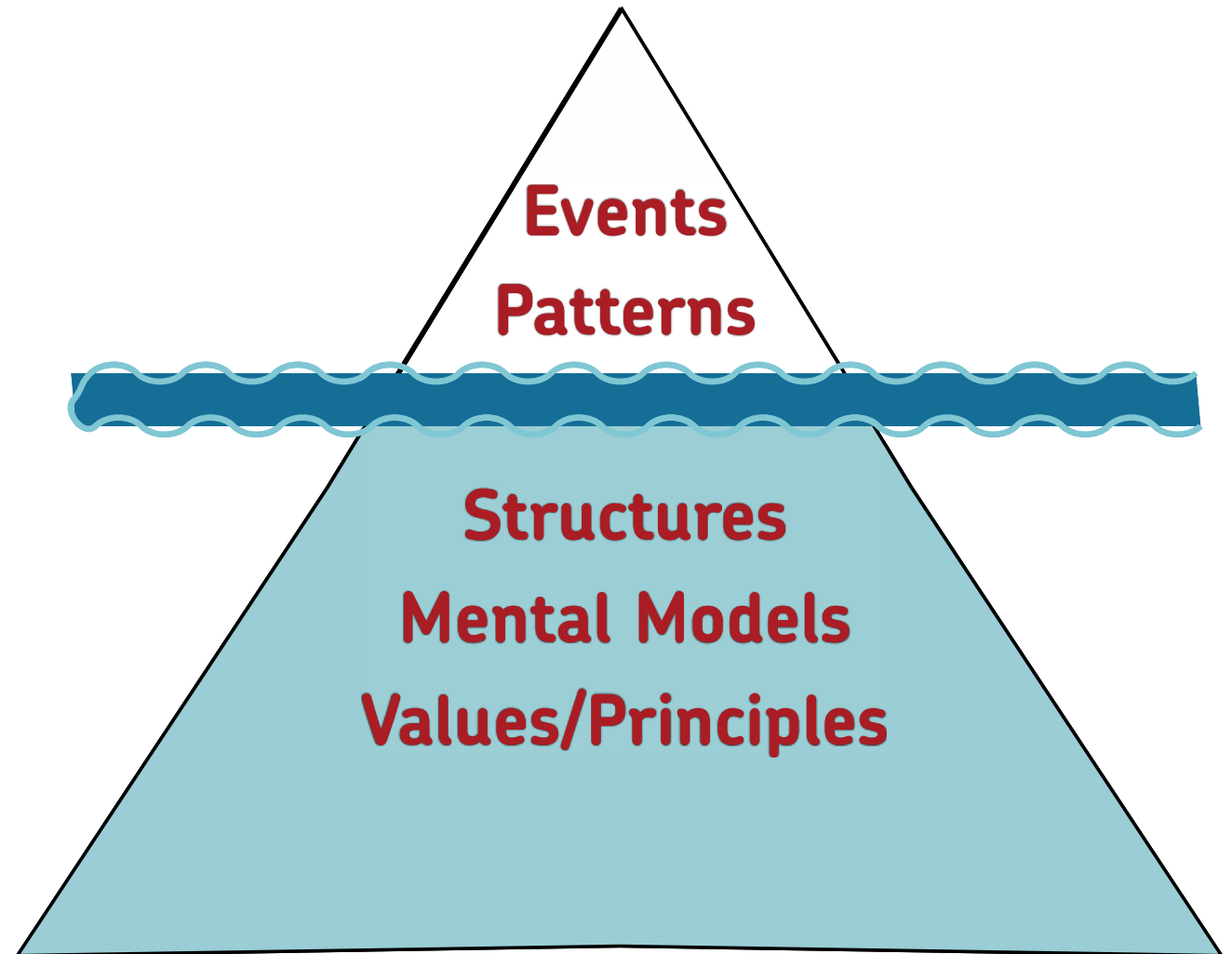
Systems Thinking

- Gives us common language and tools to understand and describe complex issues
- Helps us see how we contribute to status quo outcomes
- Is a discipline for seeing the patterns and connections underlying seemingly diverse issues
- Points to higher leverage solutions to problems

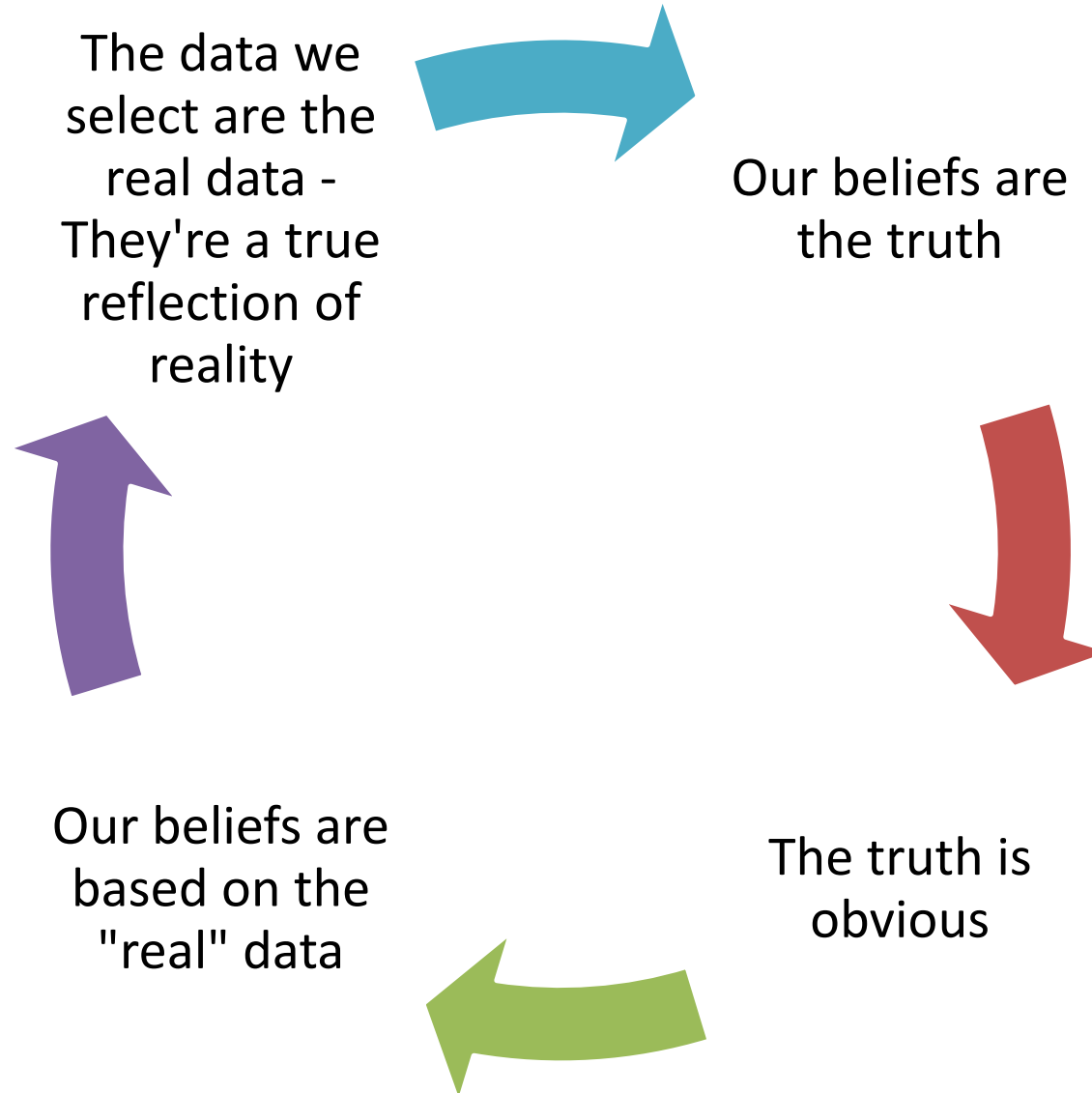
Adapted from: Henry Frechette 2000

Invite Transformation

We Increase Probability
of Lasting Change When
We Notice and Act
“Below the Waterline”



The Mental Model Trap



Ways to Surface Mental Models

- What leads you to conclude that?
- Help me understand your thinking.
- Can you share your data with me?
- I would like to know more about that.
- Where does your reasoning go next?
- How would that idea affect...?
- What would be the implications of ...?
- Can you share your thinking with me?

Think, Pair, Share

Reflect on a time when you and your colleagues felt safe surfacing and challenging mental models. What helped to make this possible?

Feedback

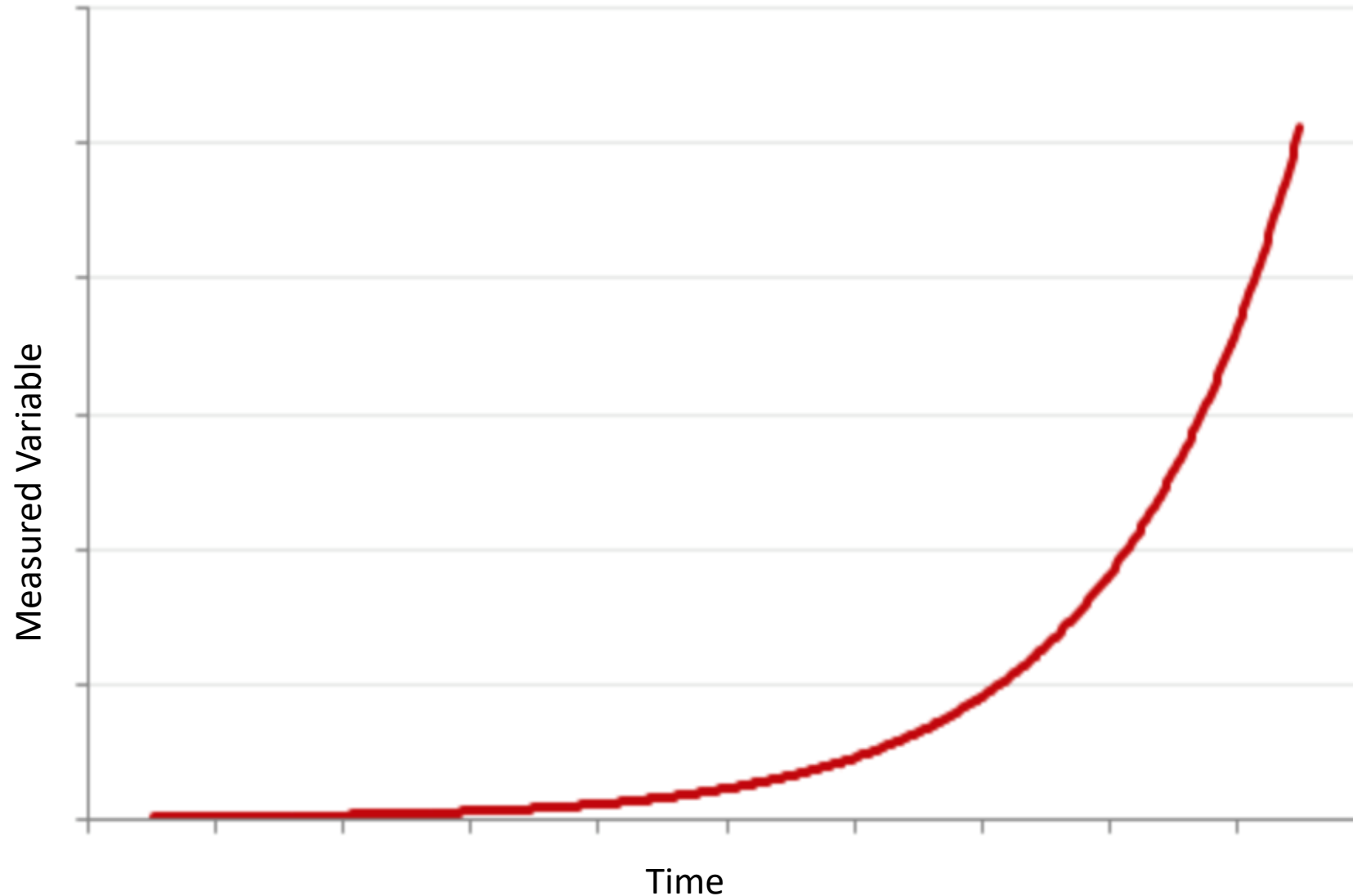
Feedback loops ...

1. Are engines of self organization
2. Describe the relationship of interdependent parts over time
3. Can create compounding effects

What happened in the past will feed into what happens now; what happens now will feed into what happens in the future.

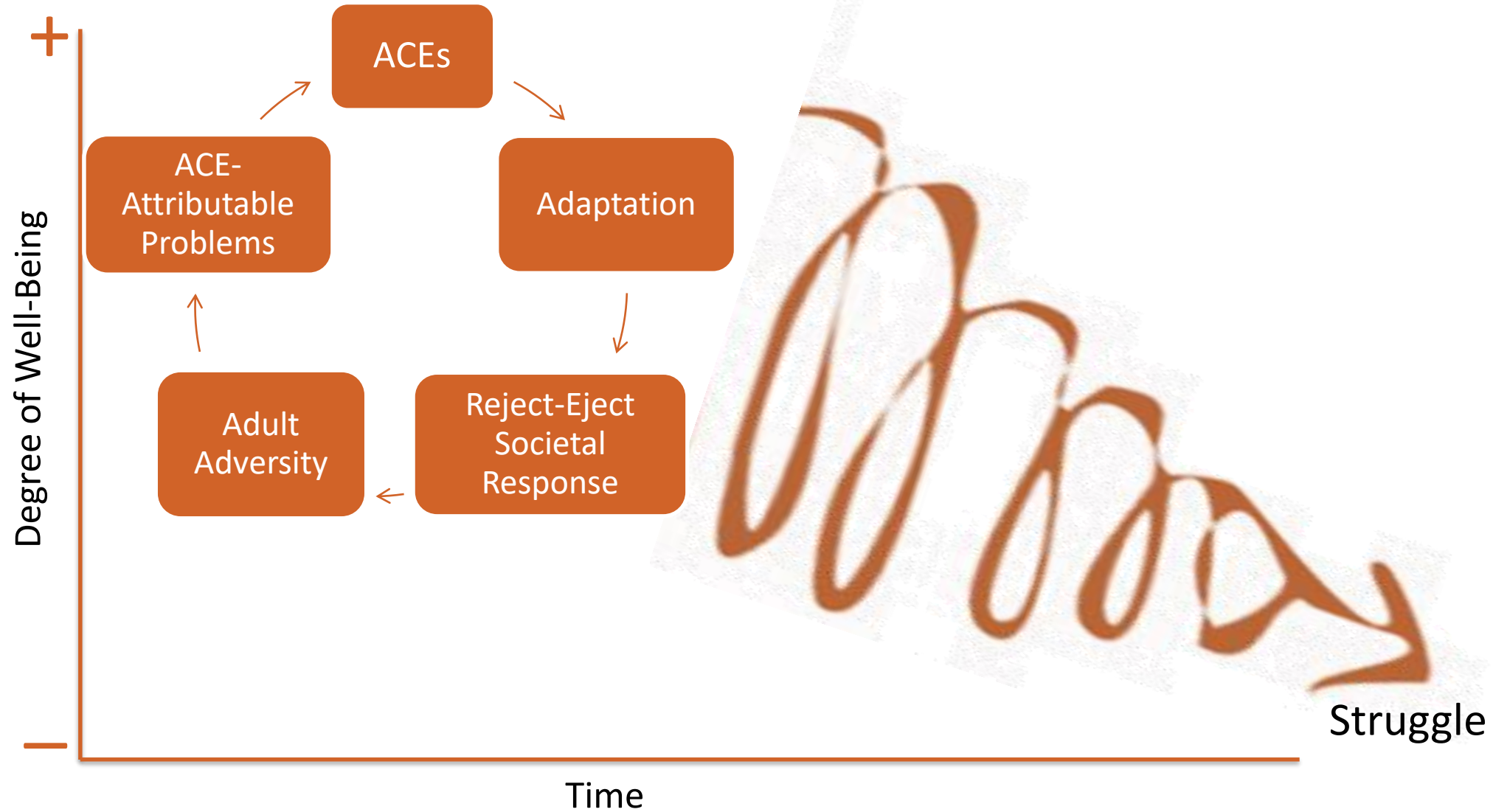
Reinforcing Feedback

An amplifying arrangement of variables, drives non-linear exponential growth/decay



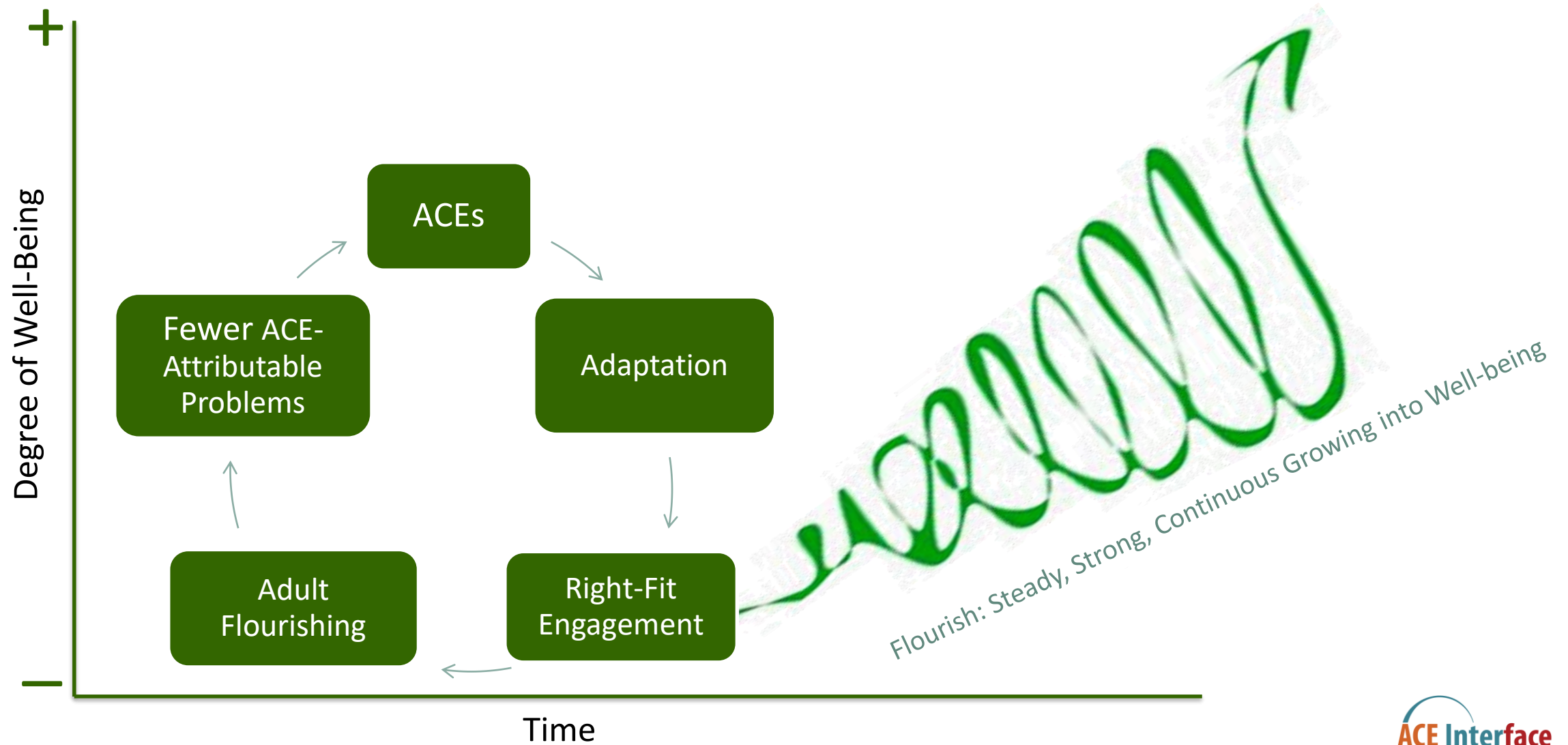
Vicious Cycle

Adversity is amplified with each turn around the loop



Virtuous Cycle

Flourishing is amplified with each turn around the loop



Help people to notice what they like about themselves and family members

- Notice what you as a provider like about the parent and/or child
- Tell me something that you enjoy about yourself/family member
- Tell me something that you/your child is good at doing
- Since the last time I saw you, tell me something that you have done that is fun

Safety, Curiosity, Play

Friendly environment-no threats

- Low stress activation – easier to notice
- Increased serotonin, oxycontin, endorphins
- Decreased adrenalin & cortisol
- Happy, relaxed

Safely arouse curiosity & interest

- Decreased emotional reactivity
- Increased learning, sensory perception, motor commands, special reasoning, language, decision making, complex thinking & personality expression (neocortex & prefrontal cortex)
- Increased dopamine
- Increased awe, joy, enthusiasm, grasping power

Simultaneous bilateral hemispheric activity with play or song in groups

- Increased right-left brain communication and coordination
- Increased serotonin and oxytocin
- Energized, heightened focus, creative intelligence, whole brain thinking

Learning Community

“A group of people who are continually enhancing their capacity to create the results they want.”

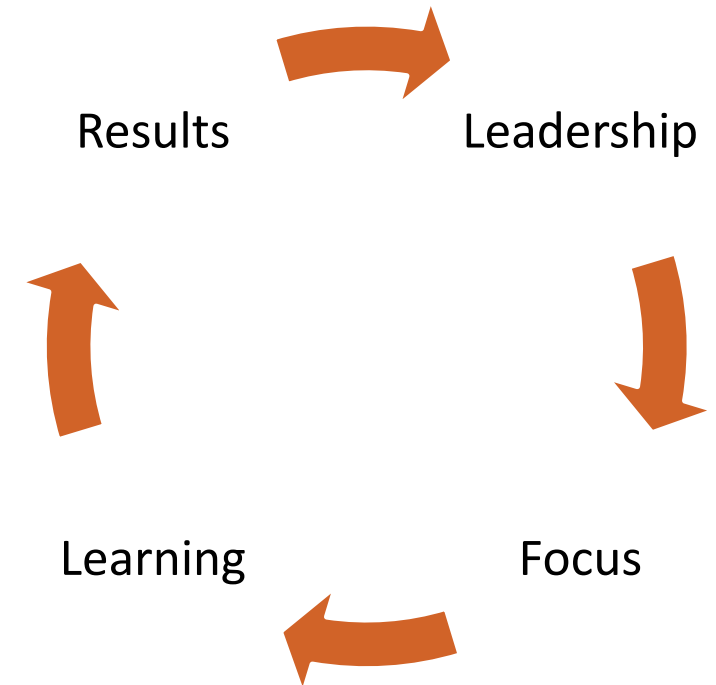
(Peter Senge, 1990)

This statement has three parts:

- 1) Be a group – hold a group identity
- 2) Know what you want to create; continually reflect on purpose, vision.
- 3) Continually develop the capability to move in that direction.

Rhythm of Engagement Builds Capacity

1. **Inclusive Leadership** – Expand Invitation: include all sectors, classes, cultural groups, professional disciplines
2. **Focus** – Agree to discuss and act on matters of real and local significance
3. **Learn Together** – Develop opportunities to learn, deepen understanding and build shared identity
4. **Reflect for Results** – Make decisions for continuous, steady, strong growing well – the legacy of Self Healing Communities



Our task as leaders
is to expand leadership and
expand opportunity for hope-
filled action.

Social and Emotional Support

“Social support is the most powerful protection against becoming overwhelmed by stress and trauma. The critical issue is reciprocity: being truly heard and seen by the people around us, feeling that we are held in someone else’s mind and heart.”



Help *that* **Helps**





Four Resilience Factors that Make a Difference They are even more powerful when we Layer Up...

1. Feeling social/emotional support and hope
2. Having 2 or More People Who Help (two or more people who give concrete help when needed)
3. Community reciprocity in watching out for children, intervening when they are in trouble, doing favors for one another
4. Social Bridging – People reach outside their social circle to get help for their family and friends



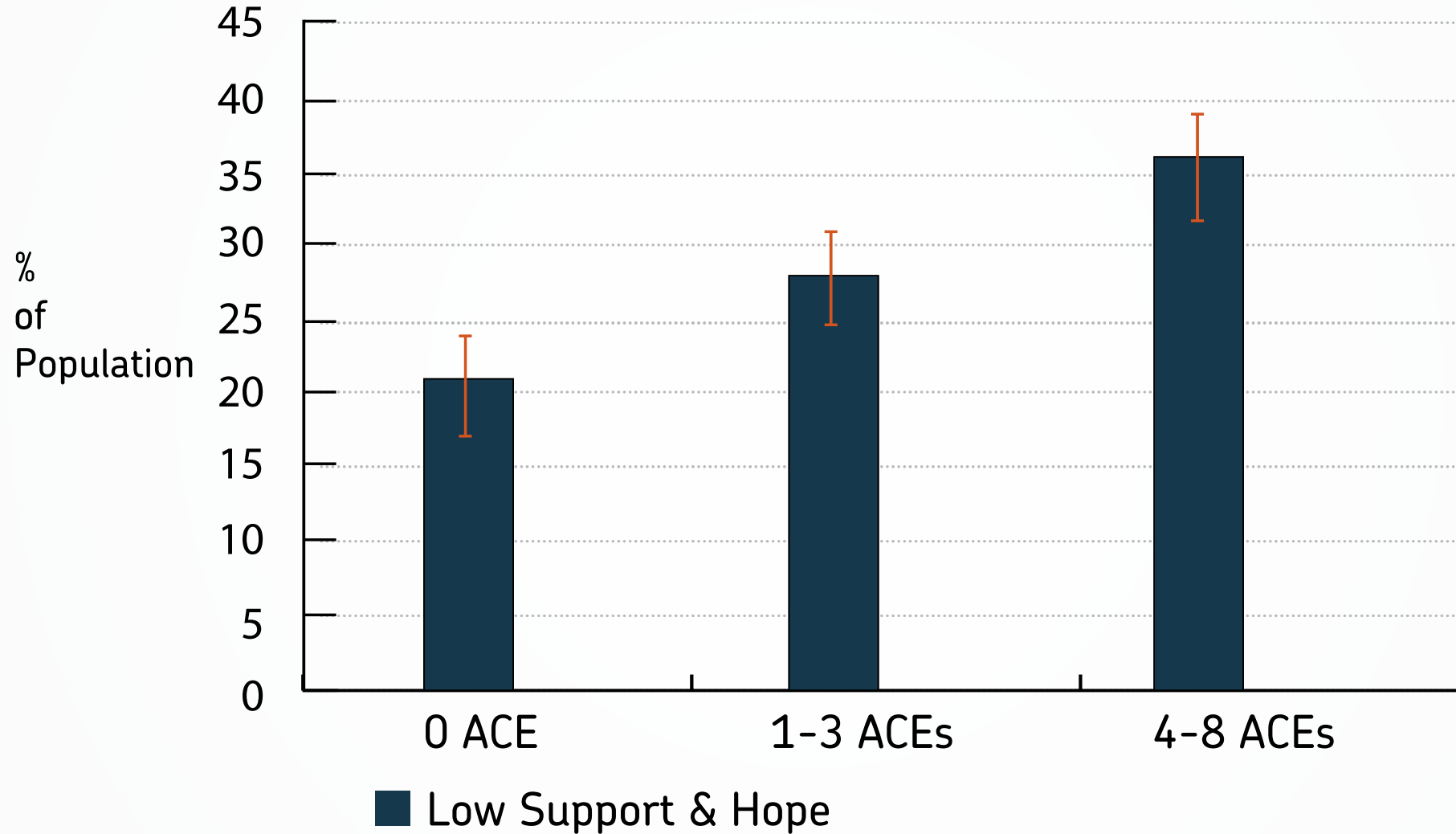
Support

FEELING
socially & emotionally
SUPPORTED
&
HOPEFUL

... Always or Usually
(vs Rarely or Never)

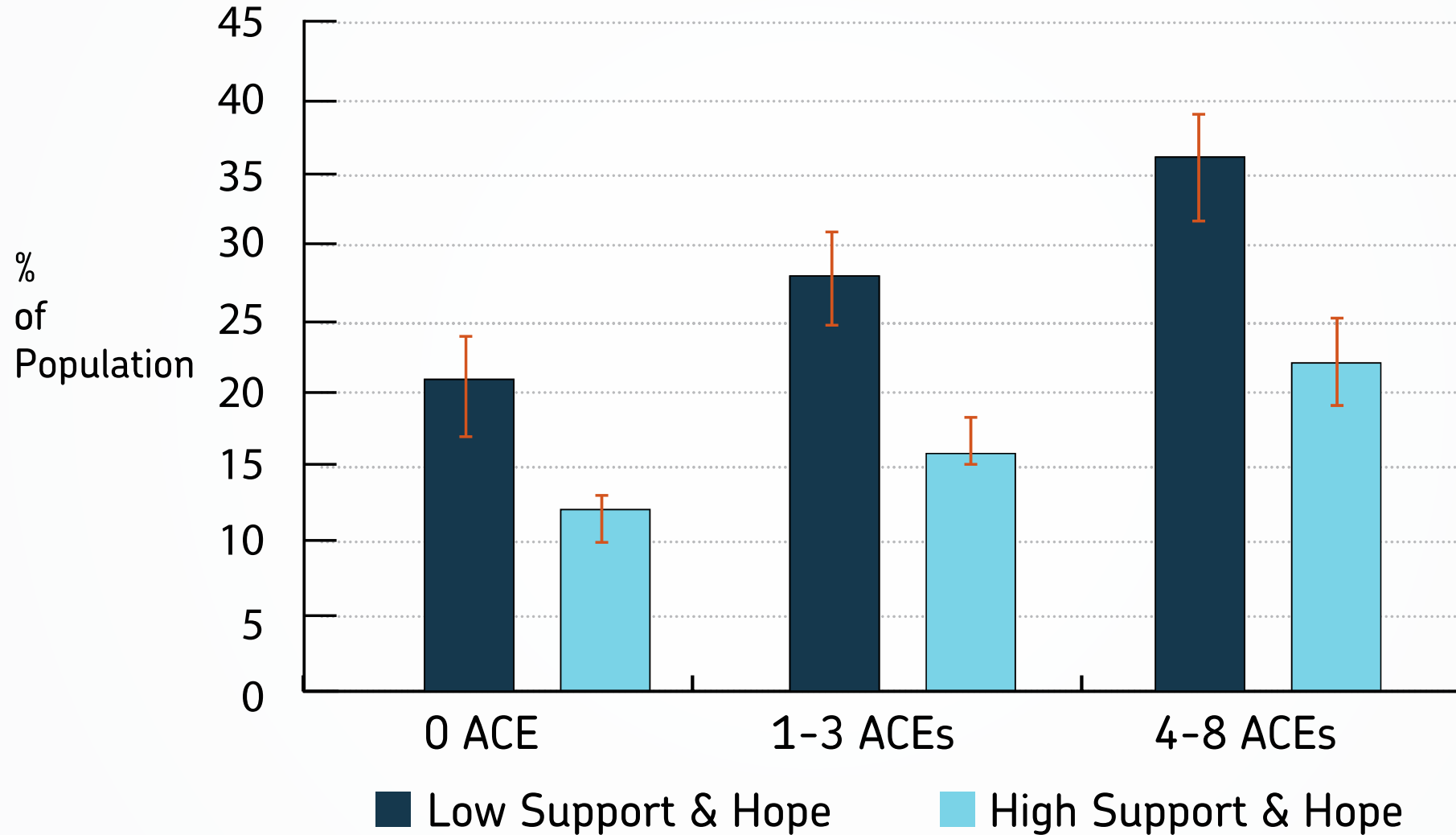
ACEs & Smoking

Smoker With Low Support & Hope



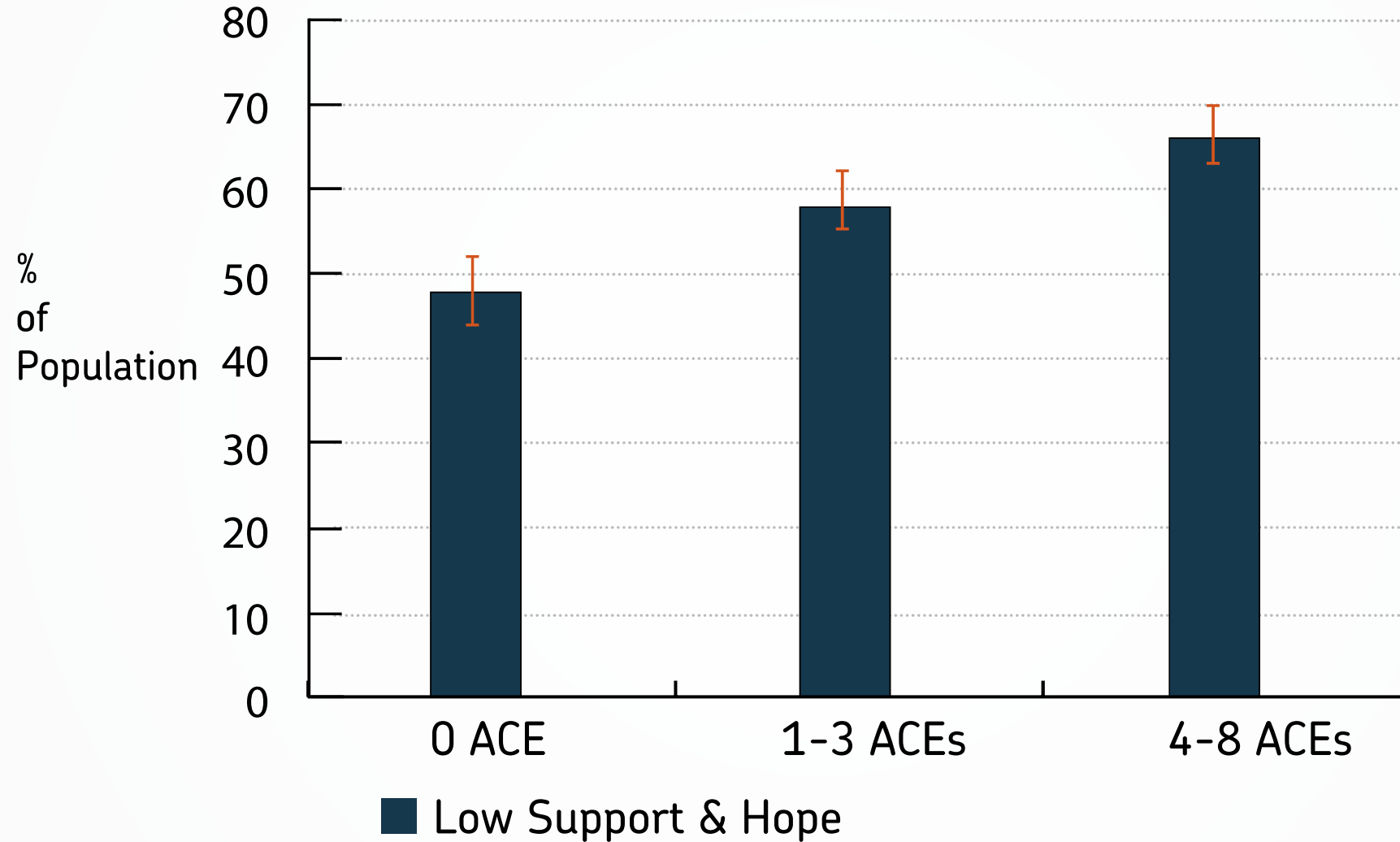
Smoking & Support

Smoker With High Support & Hope



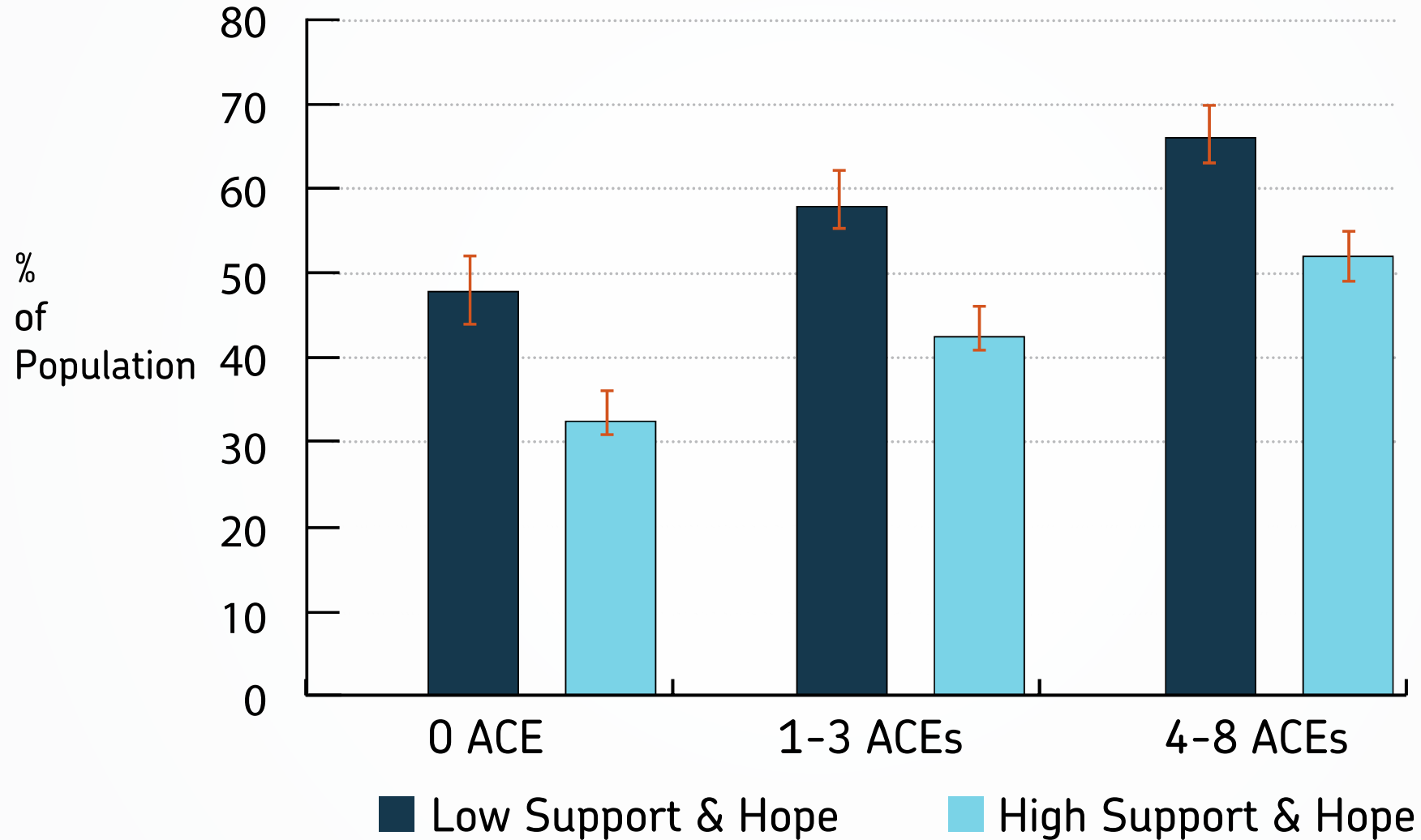
ACEs & Sleep

Not Enough Sleep 7 or more Days Past Month With Low Support & Hope



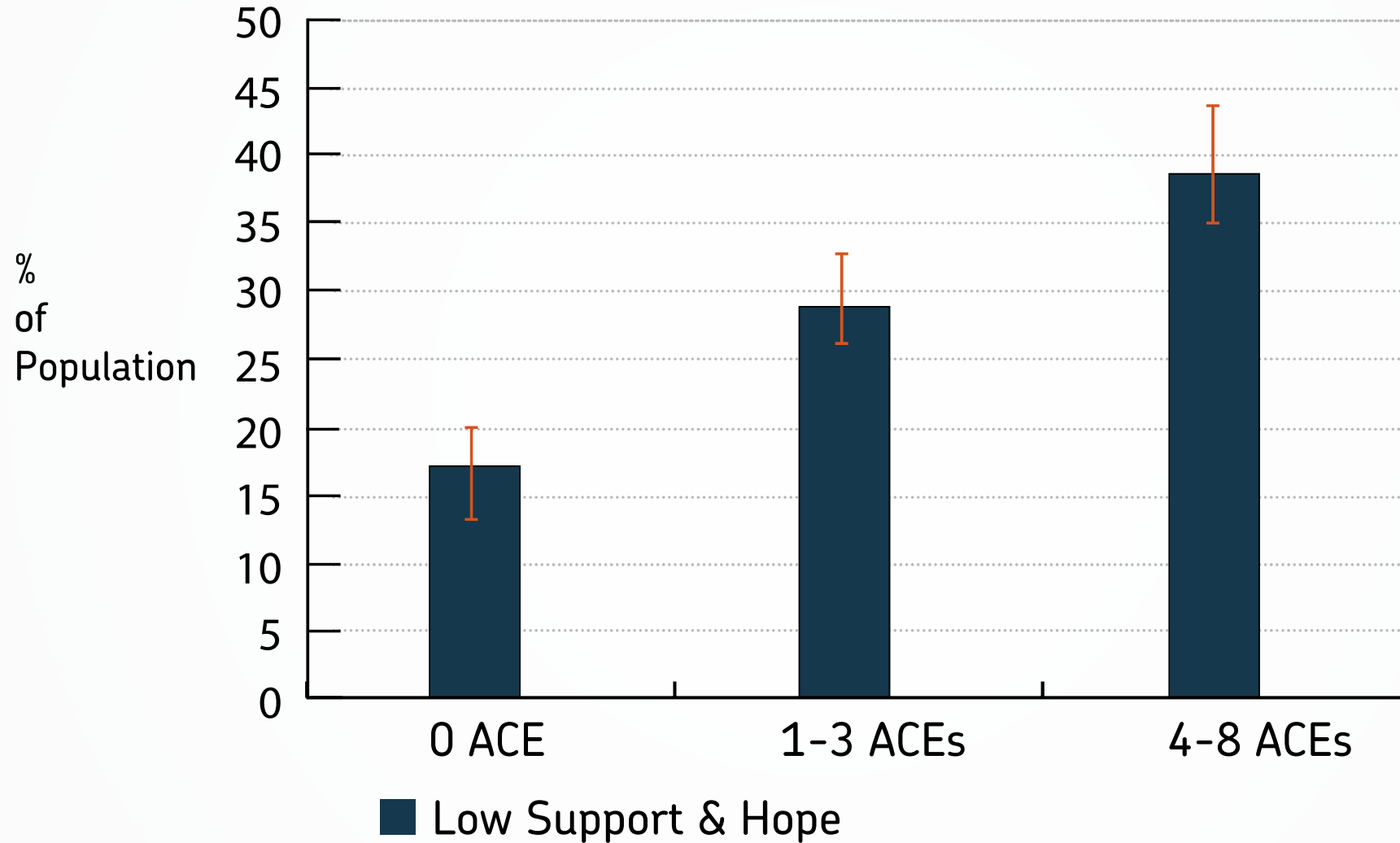
Sleep & Support

Not Enough Sleep 7 or more Days Past Month With High Support & Hope



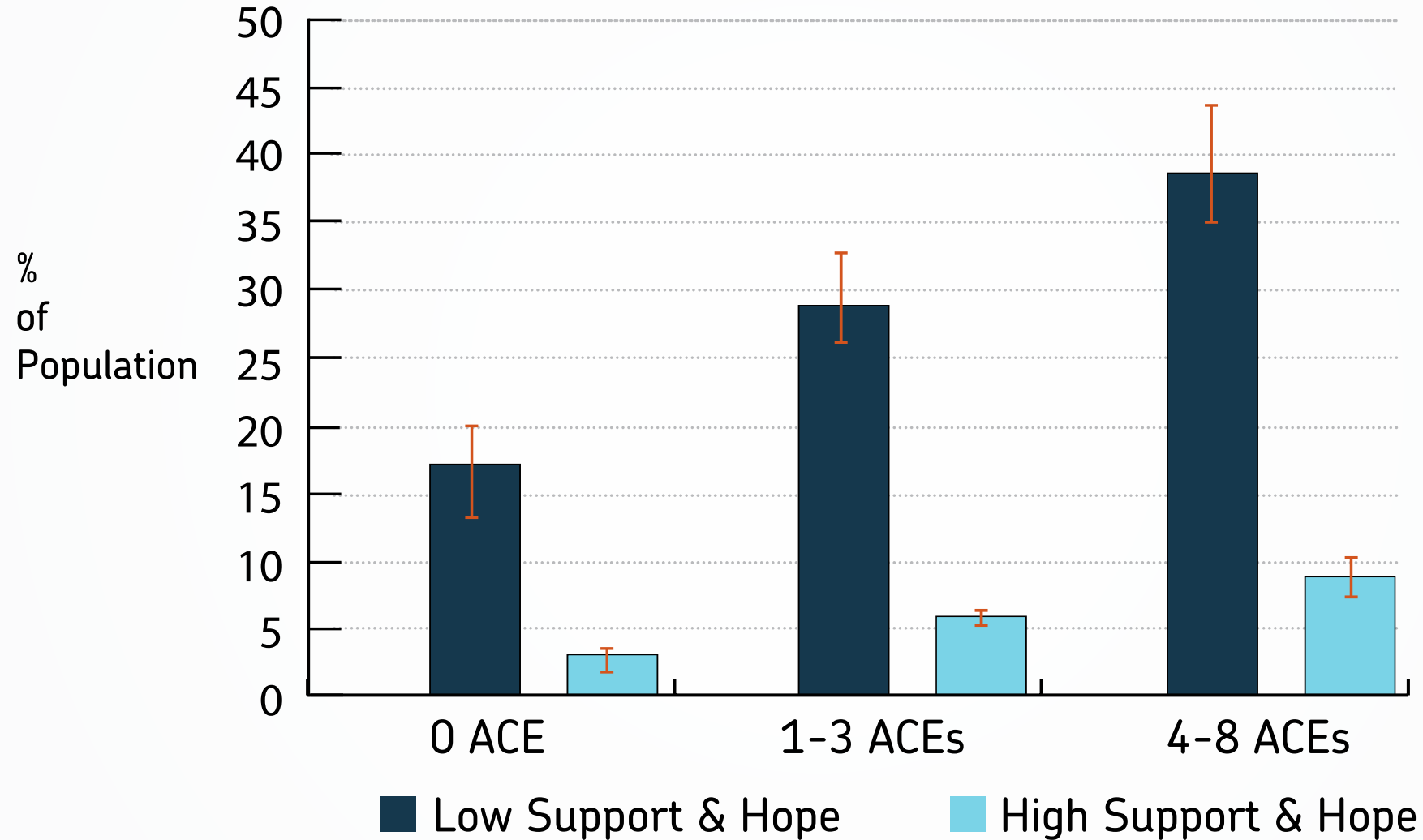
ACEs & Poor Mental Health

Poor Mental Health More Than Half Last Month With Low Support & Hope



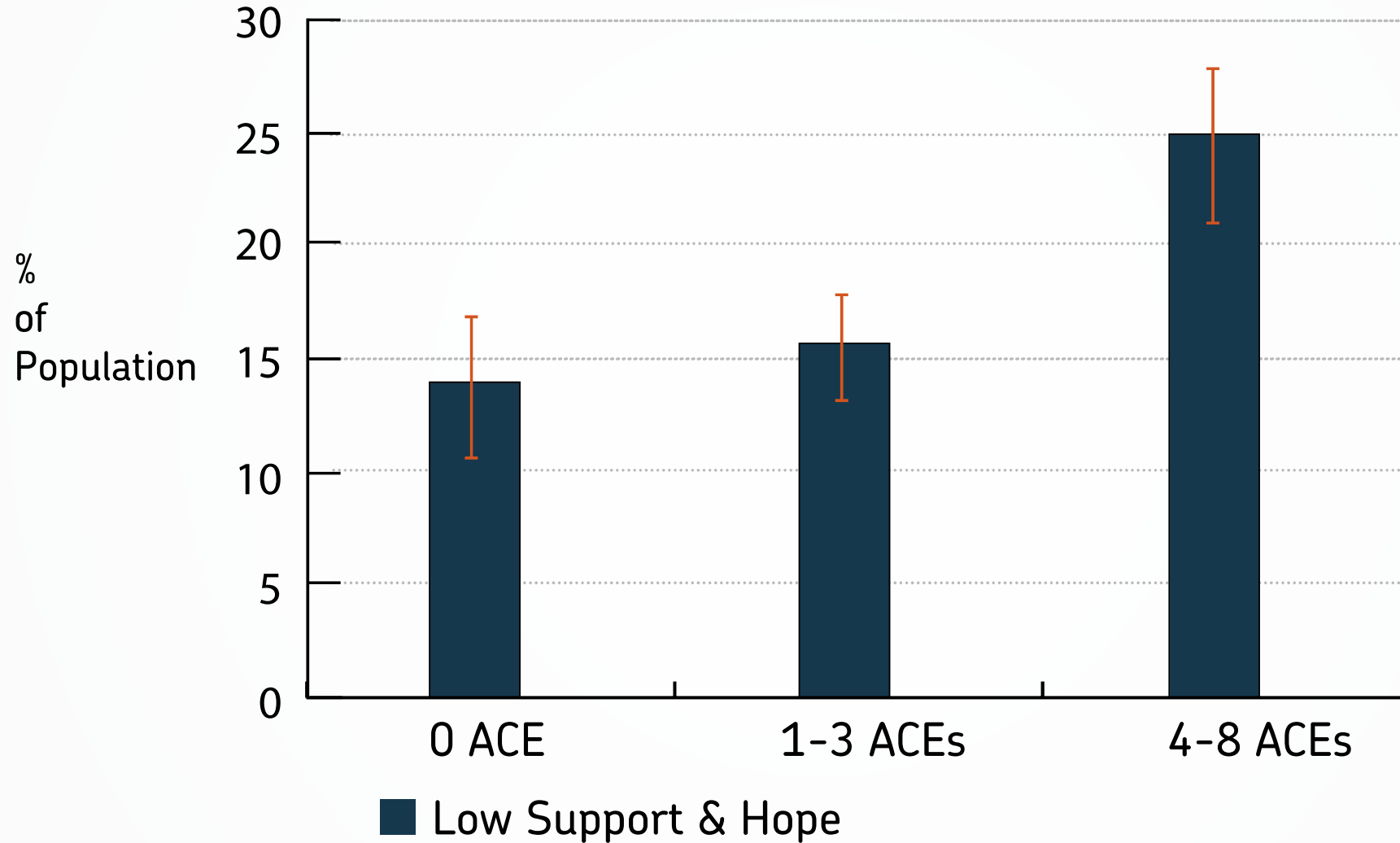
Mental Health & Support

Poor Mental Health More Than Half Last Month With High Support & Hope



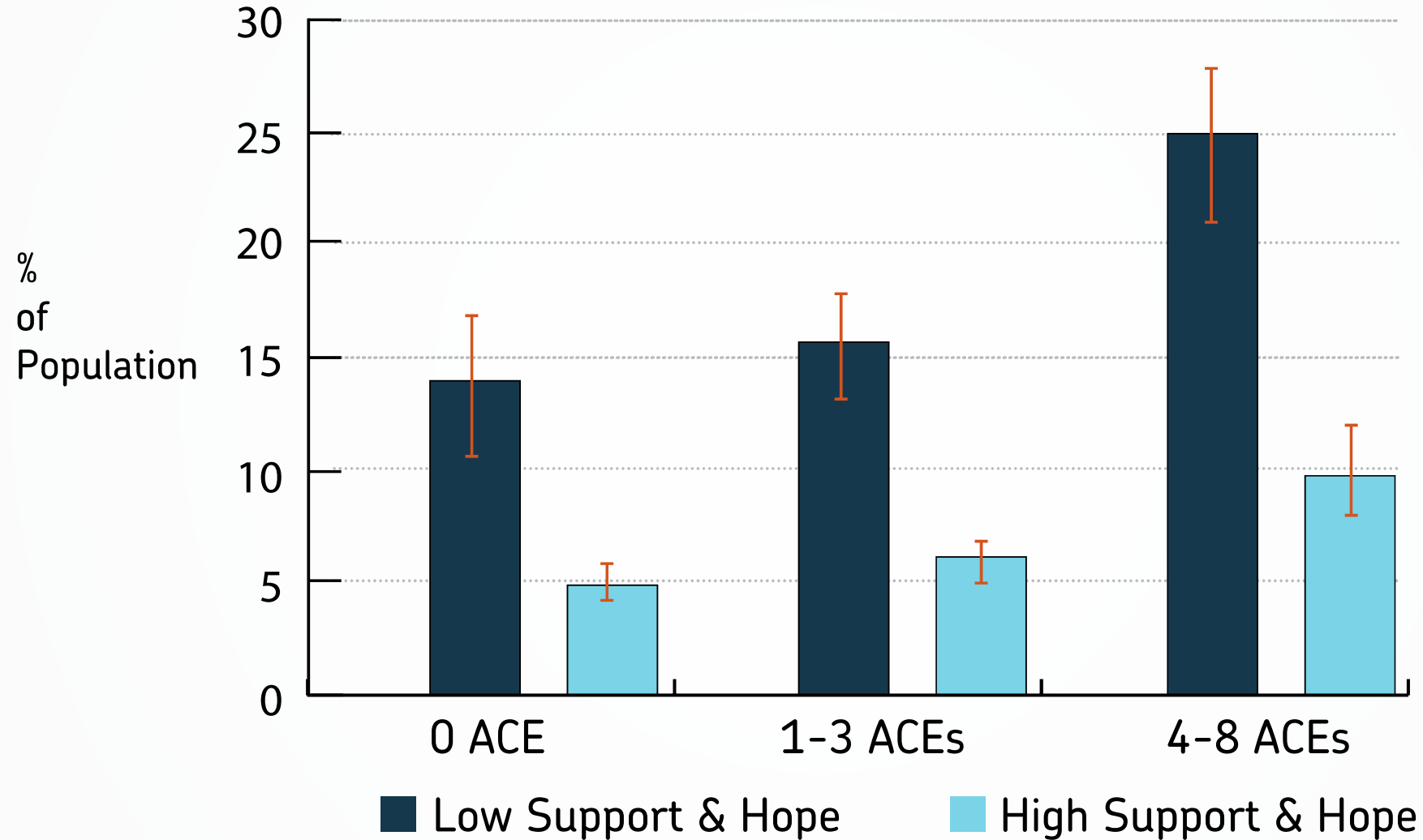
ACEs & Poor Health

Poor Physical Health More Than Half Last Month With Low Support & Hope



Poor Health & Support

Poor Physical Health More Than Half Last Month With High Support & Hope



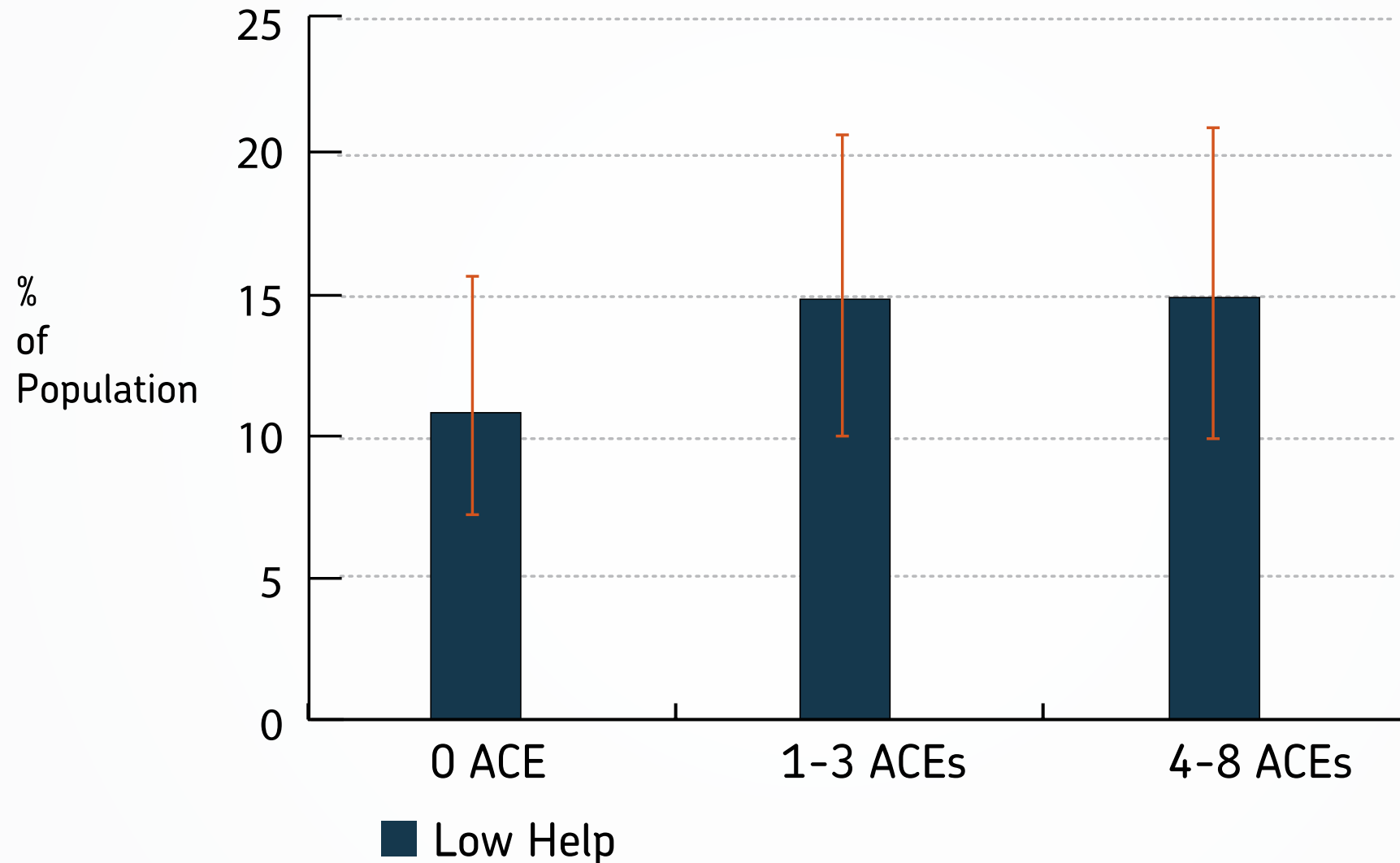
HELP

**Having two
or more
people who
give concrete
help when
needed**



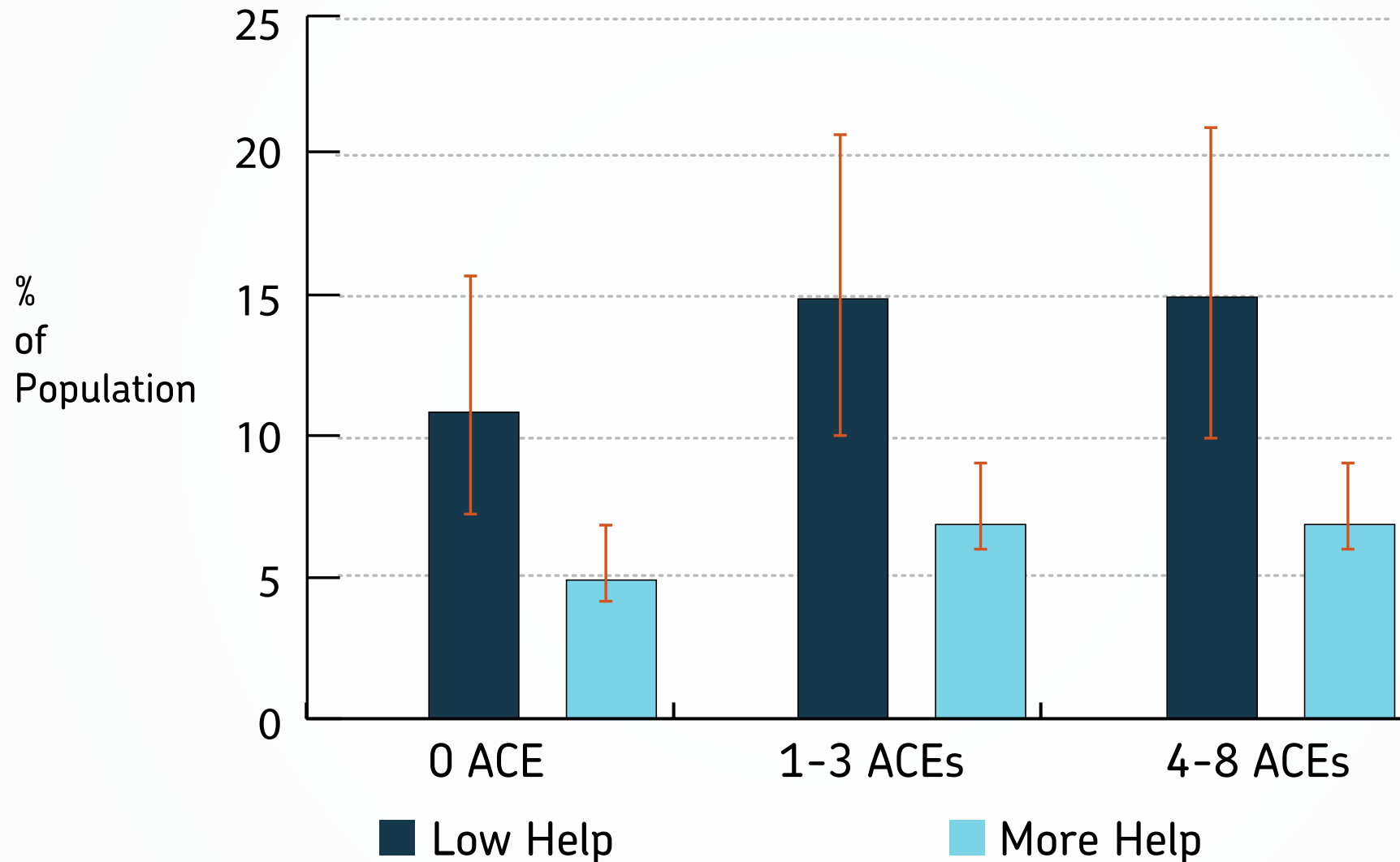
ACEs & Diabetes

Diabetes With Help



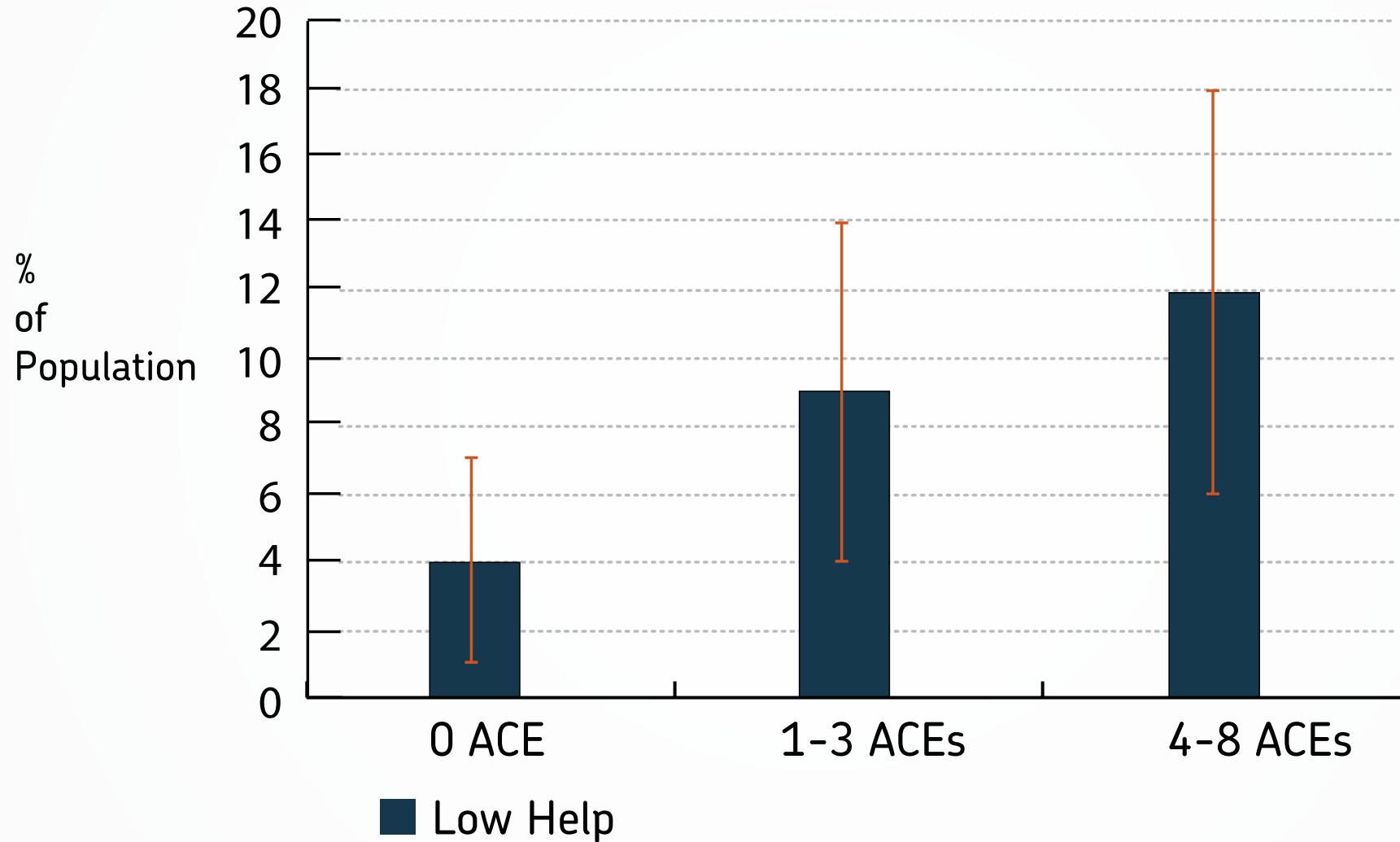
Diabetes & Help

Diabetes With Help



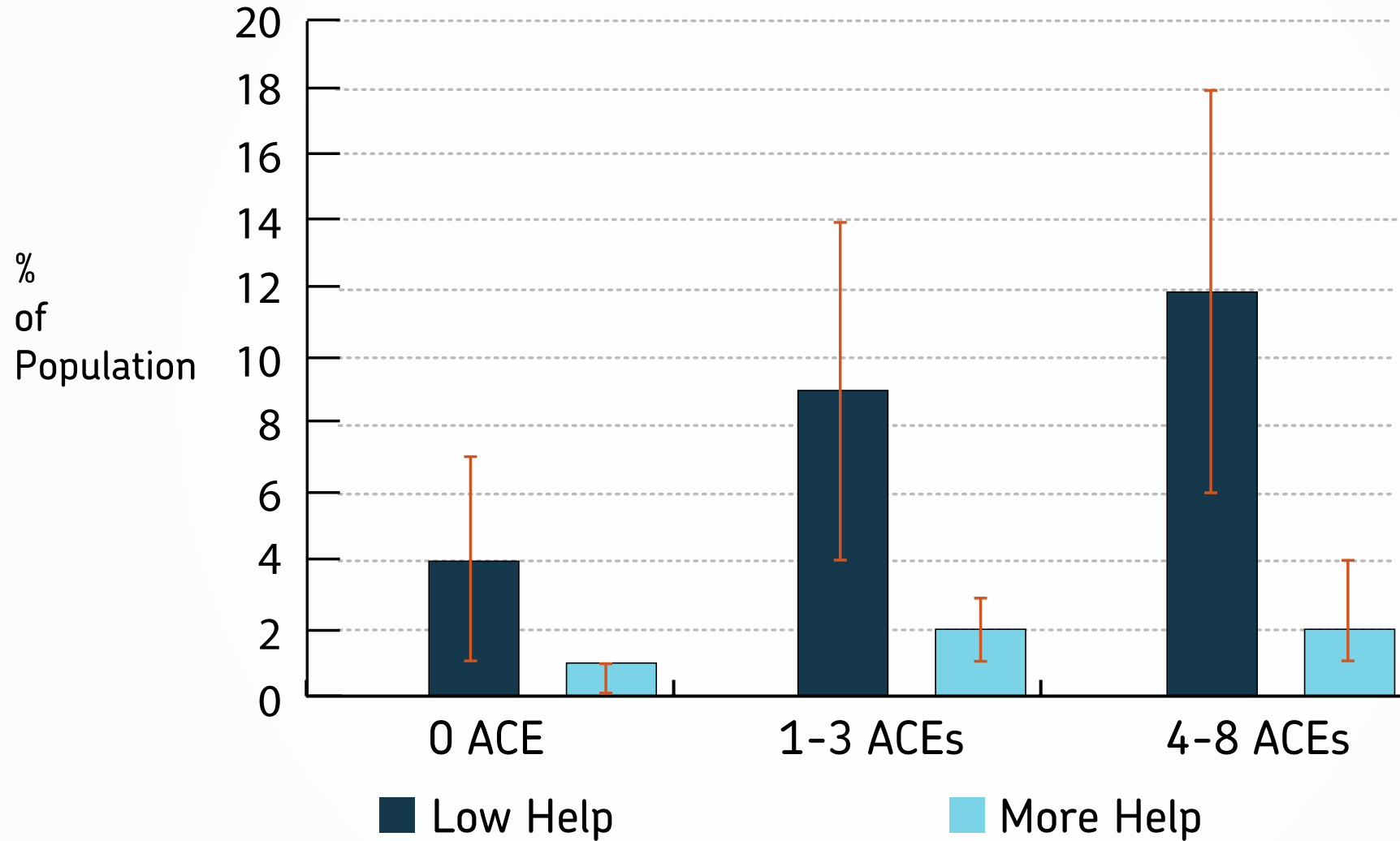
ACEs & Depression

Depress All or Most of Last Month With Help



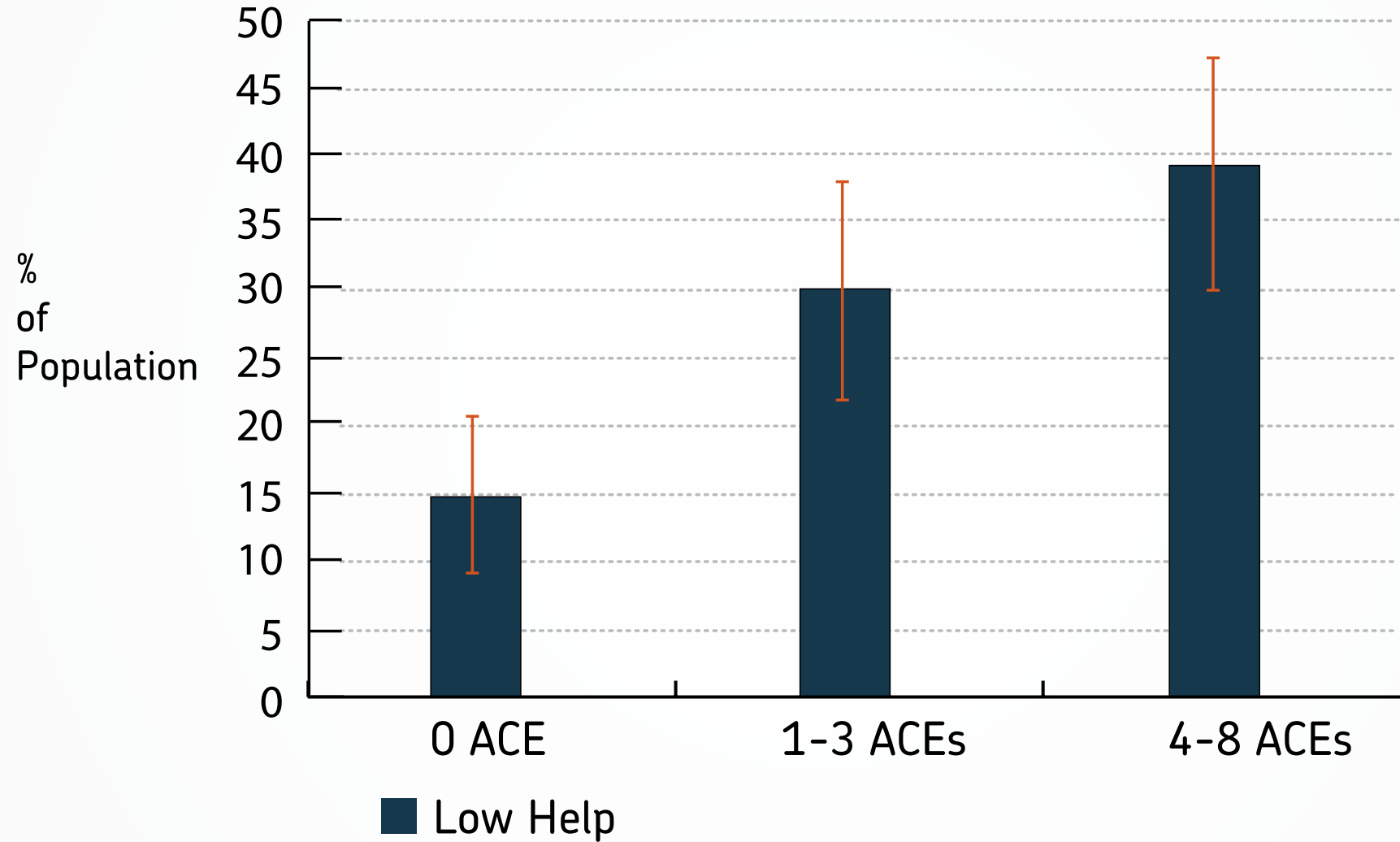
Depression & Help

Depress All or Most of Last Month With Help



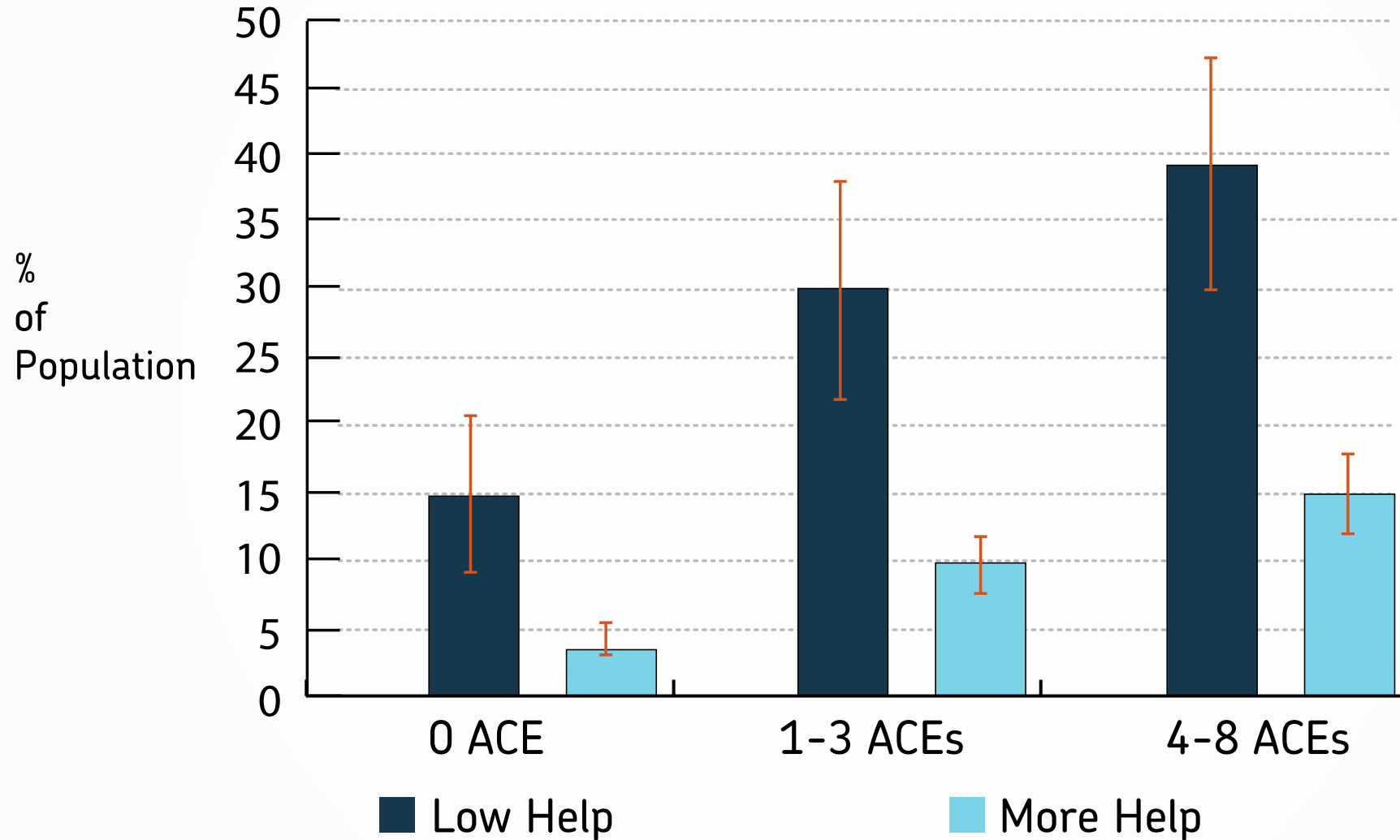
ACEs & Mental Illness Symptoms

Moderate-Serious Mental Illness With Help

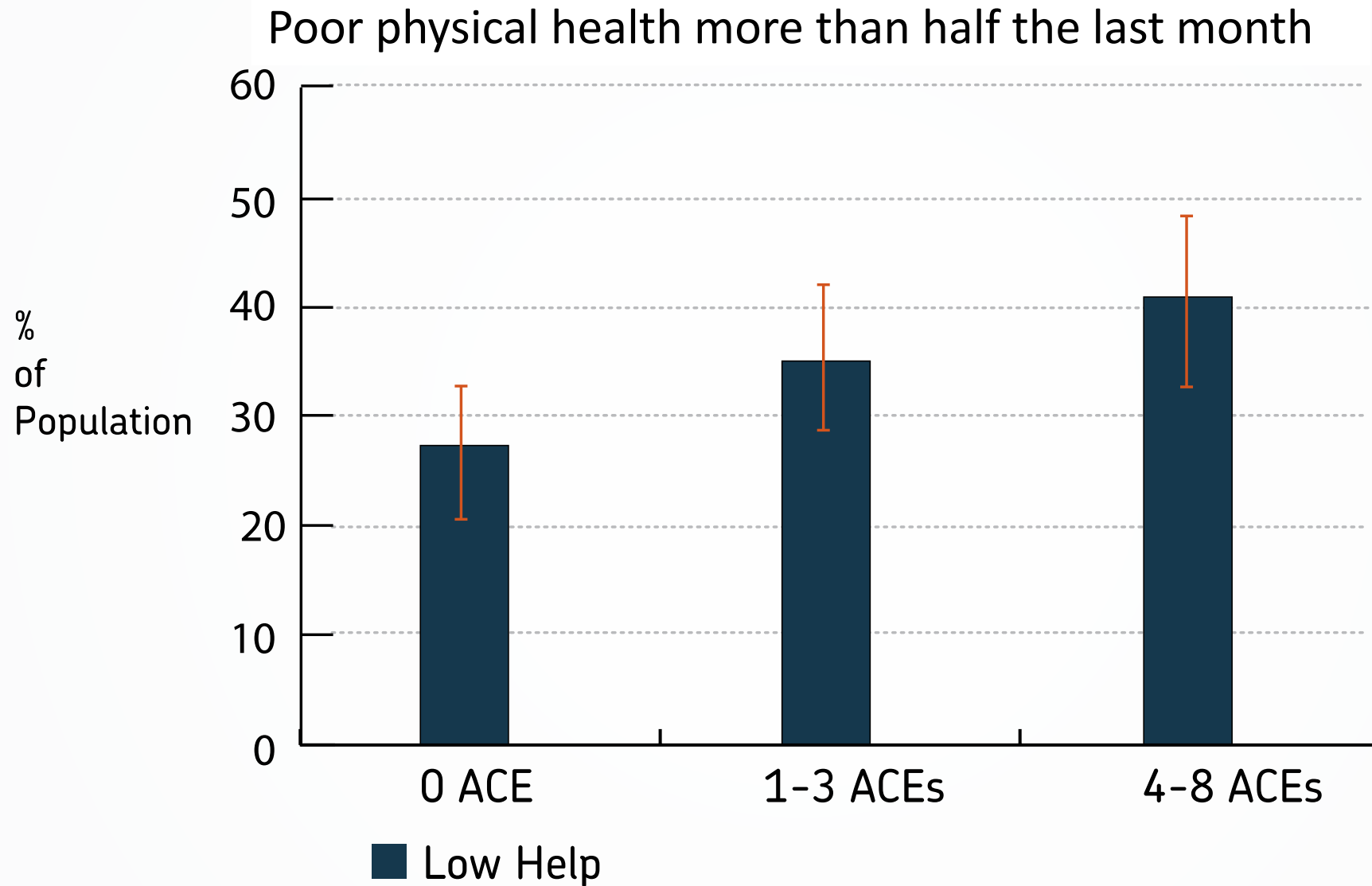


Mental Illness Symptoms & Help

Moderate-Serious Mental Illness With Help

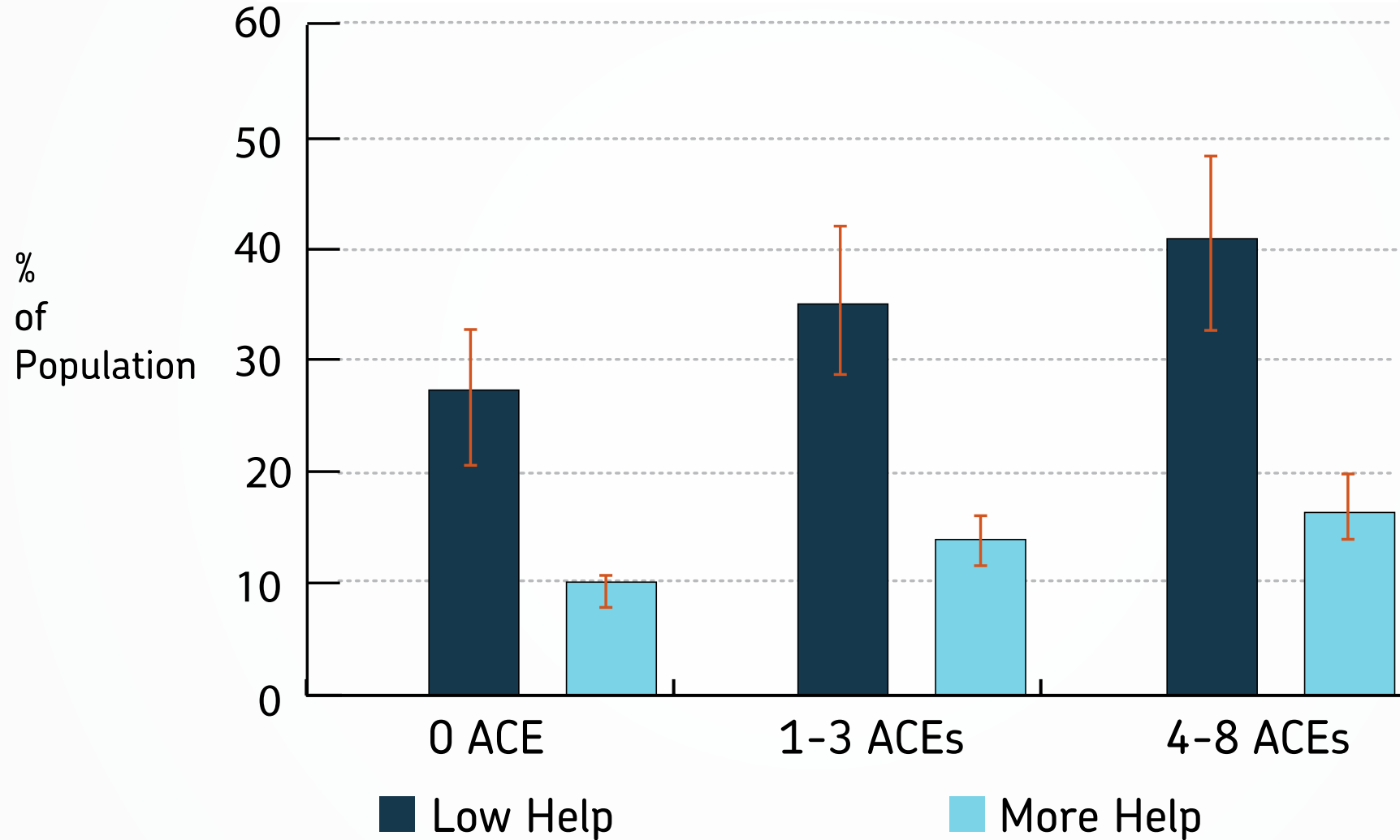


ACEs & Poor Health



Poor Health & Help

Poor physical health more than half the last month



When communities with high ACE prevalence
also have high rates of reciprocity,
parenting adults are
less likely to be depressed.

Depression Among Caregivers of Young Children

- 12% to 17% of mothers of infants or toddlers report major depression
- Up to 50% of those report persistent depression for a year or more
- 25% of caregivers with report to CWS had major depression within past 12 months –leading risk factor: IPV
- 46.3% had ever suffered major depression

People in your community do **favors** for each other often or very often.

...helping with shopping, lending garden or house tools, watching over property, and other small acts of kindness.



Social Cohesion: Mutual Favors

You can count
on adults in your
community to
**watch out that
children are
safe** and don't
get in trouble.

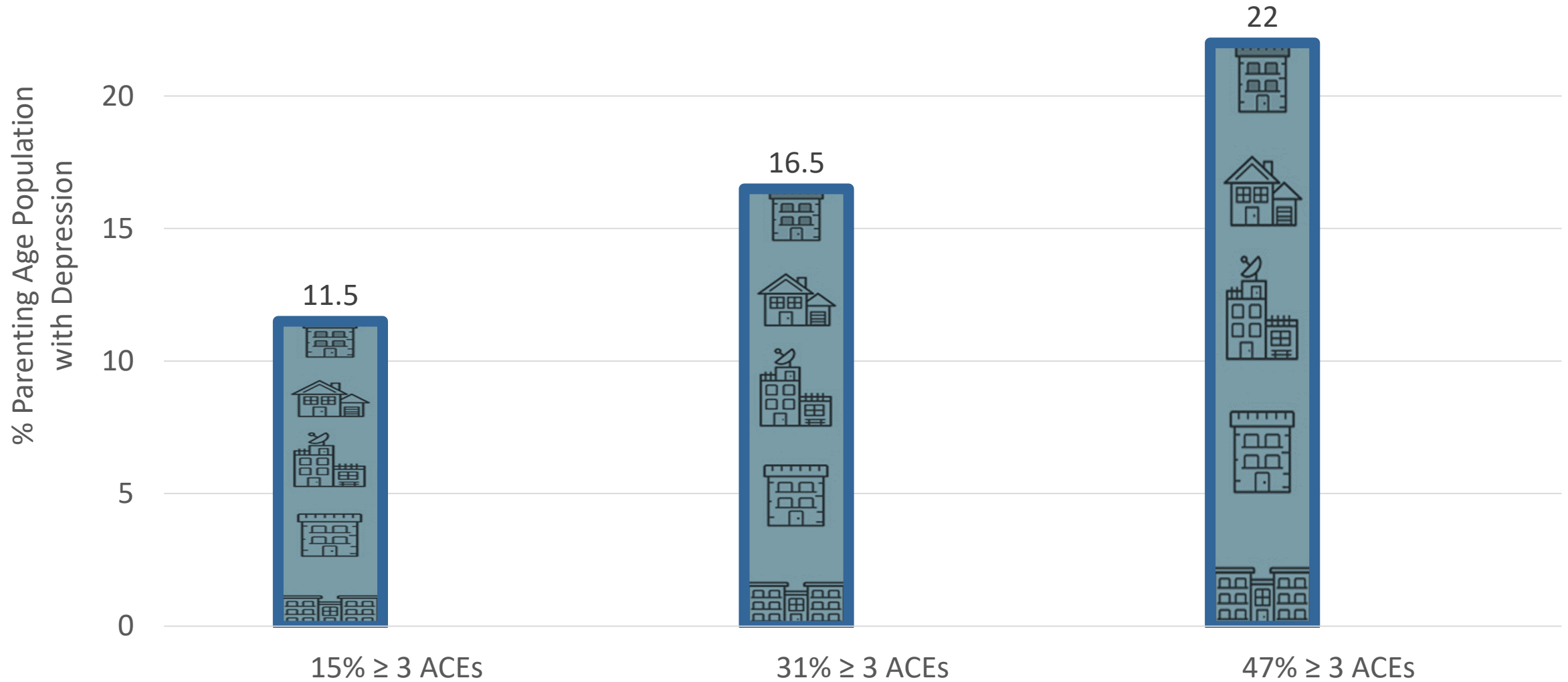


Your community members can be counted on to intervene if children are skipping school and hanging out in your community.



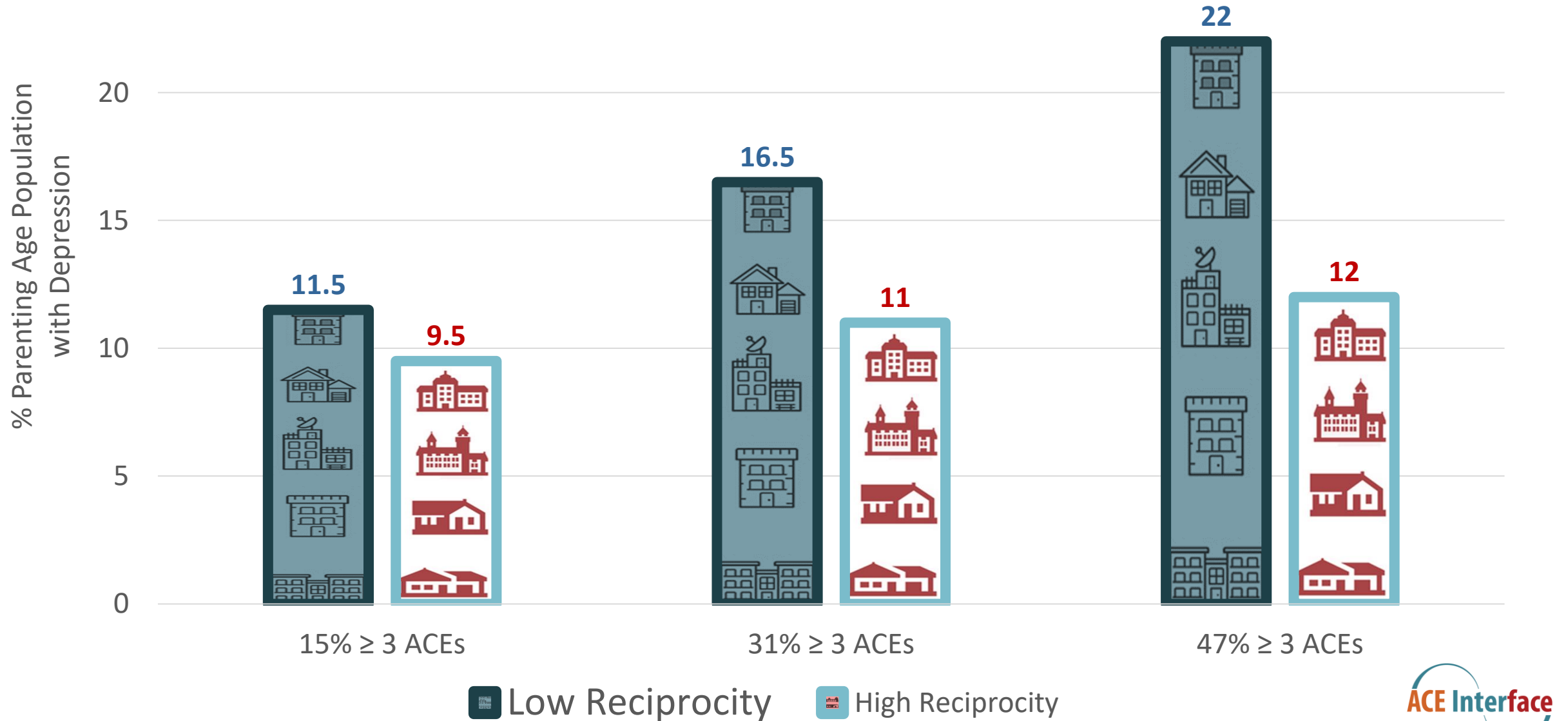
Social Efficacy: Intervene if Children Need Support

Parental Depression in Communities with Variable ACE Prevalence & Low Reciprocity



 Low Reciprocity

Parental Depression in Communities with Variable ACE Prevalence & High Reciprocity



Reciprocity & Bridging: Two Generation Benefits

Better Child Well-Being:

School Performance

Mental Health (depression, suicide)

Physical Health (asthma, diabetes, obesity)

Drug Use

Alcohol Use

Less Physical Fights

Youth wellbeing & contextual resilience (2015)
Preliminary analysis of WA BRFSS & Youth Survey, S.
Reed & D. Longhi

Adults: Better Health & Health Behaviors:

Obesity

Mental Illness Symptoms

Alcohol Consumption among Women

Physical Activity

Happiness

Worry about Money for Rent

Having A Primary Care Physician

Experiencing Housing Instability

Being Hungry Because of No Money

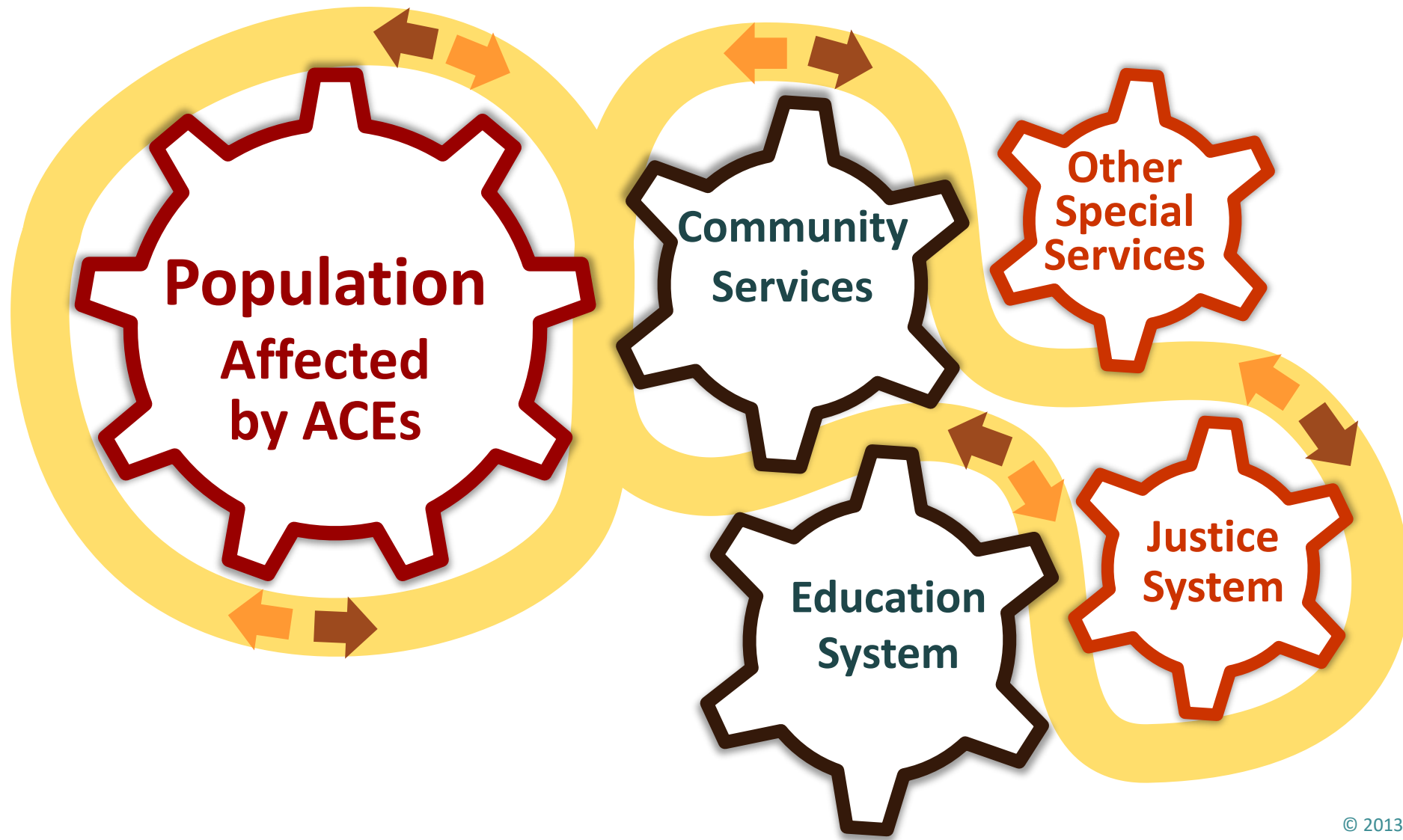
Adult wellbeing & contextual resilience (2015) Preliminary analysis of
WA BRFSS, A. Reeves

We Generate Healing & Health

“We are not consciously aware of most of our culture. Instead, culture becomes our autopilot. However, we have the ability to consciously take control of our perceptions, thoughts and behaviors and generate a culture that promotes healing and health.”

Kimberly Martin; Self-Healing Communities; RWJ 2016

Building Self-Healing Communities



Individual Writing

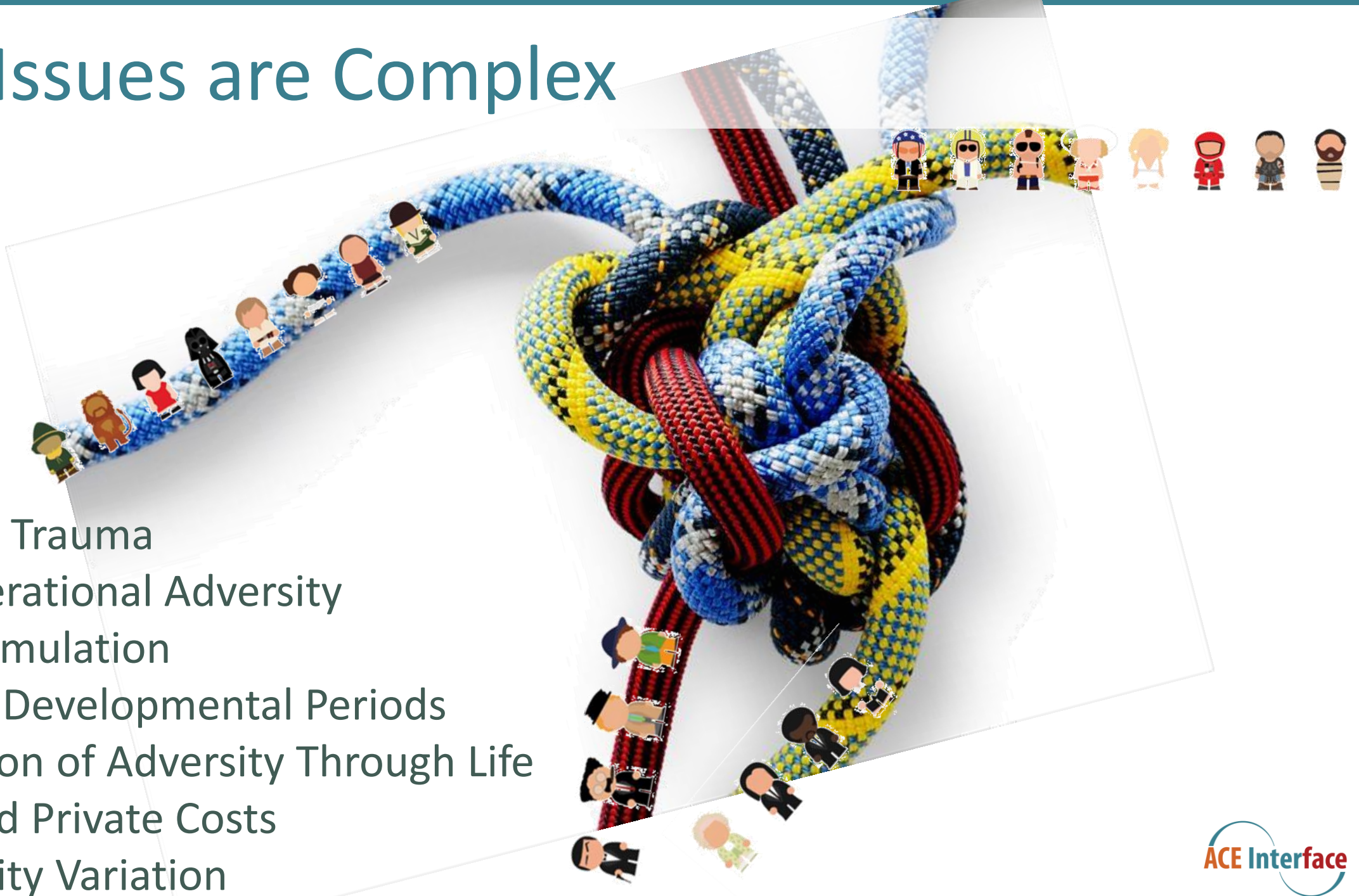
Given my sphere of influence

– at work, community, family, system integration leadership –

what ideas do I have for putting this knowledge to work?

The Issues are Complex

Historical Trauma
Intergenerational Adversity
ACE Accumulation
Sensitive Developmental Periods
Progression of Adversity Through Life
Public and Private Costs
Community Variation



Resources are Finite

We need solutions that address the complexity of problems ... and foster measurable change in different community environments at modest costs





Communities are Powerful We're Creating a Culture of Wellbeing

“Community is a living,
spiritual entity,
supported by every
responsible adult.”

Gregory Cajete

Successful Journey for Child Safety



In this place:

- History of natural disasters
- History of assault on way of life
- Historical trauma affects large portion of population
- High ACE prevalence – bi-modal split in scores
- Stunning success for a small investment

Call To Action



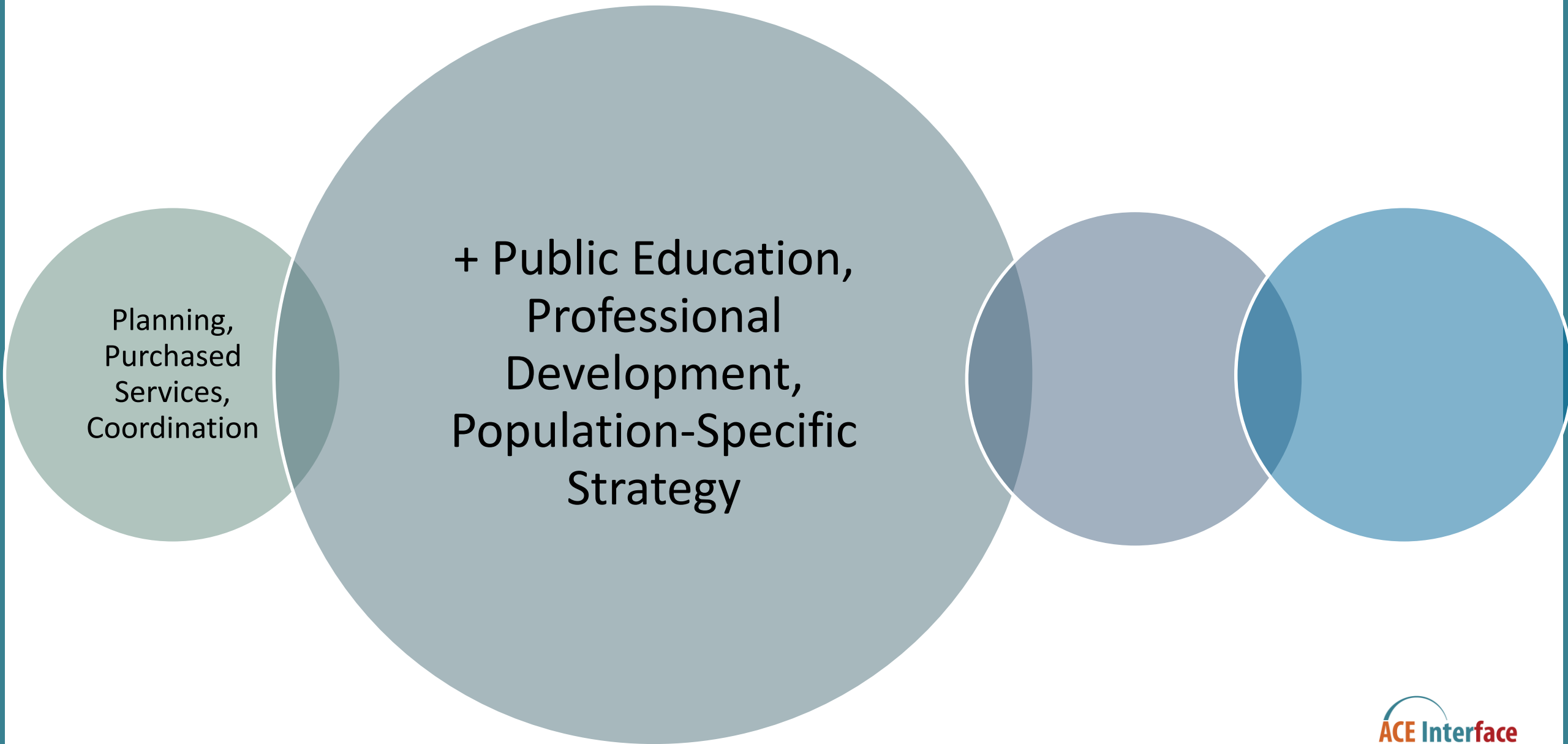
WAIT
All of us know...

Strategy Layering Over Time

Planning, Purchased
Services,
Coordination,
Colocation

8-10 Years

Strategy Layering Over Time



Strategy Layering Over Time

Planning,
Purchased
Services,
Coordination

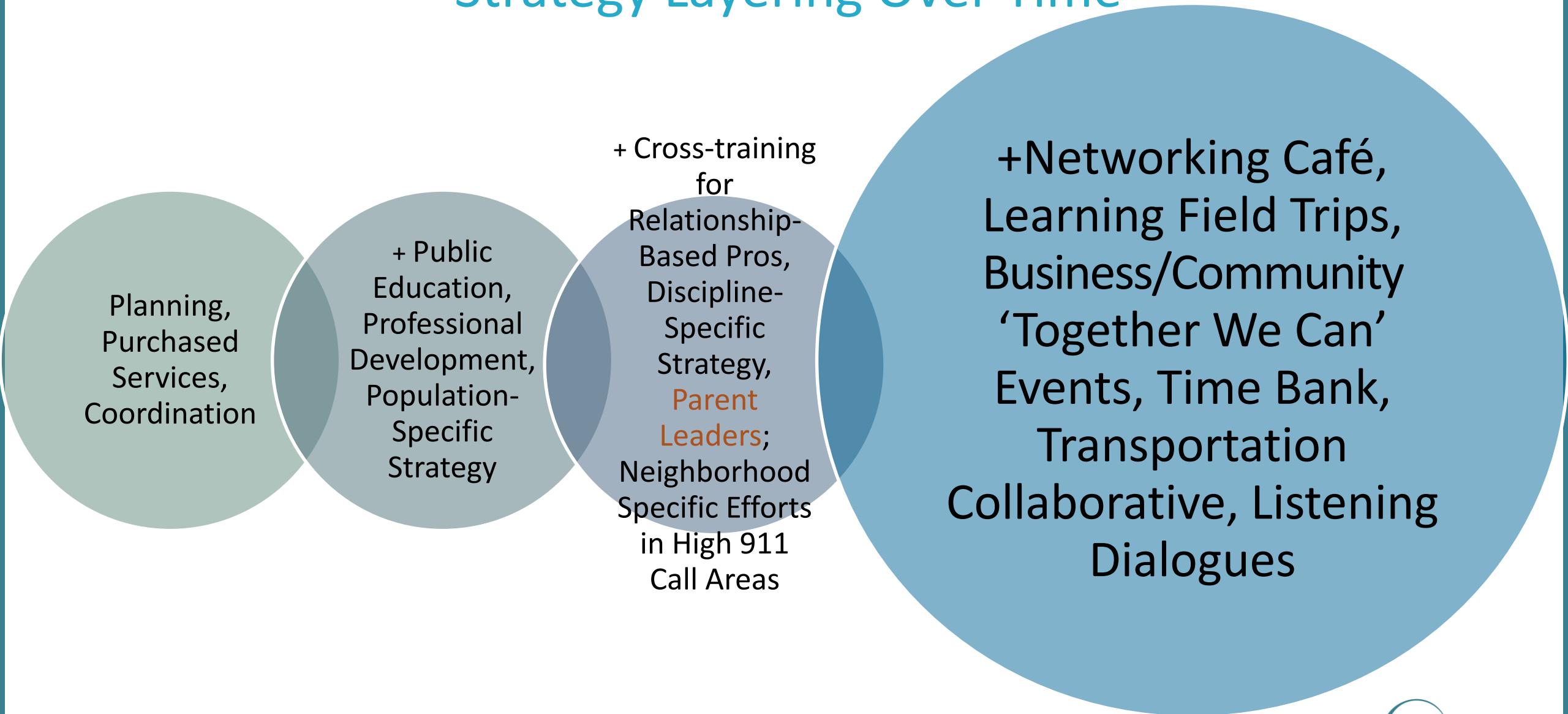
+ Public
Education,
Professional
Development,
Population-
Specific
Strategy

+ Cross-training for
Relationship-Based Pros,
Discipline- Specific
Strategy,
Parent Leaders;
Neighborhood Specific
Efforts in High 911 Call
Areas

Turning Point

“Improve parent skills so parents can give sound advice and be good mentors to their children, and, in turn will gain skills and relationships to give sound advice to the community – and that advice will make a better system of help for them and for other families.”

Strategy Layering Over Time

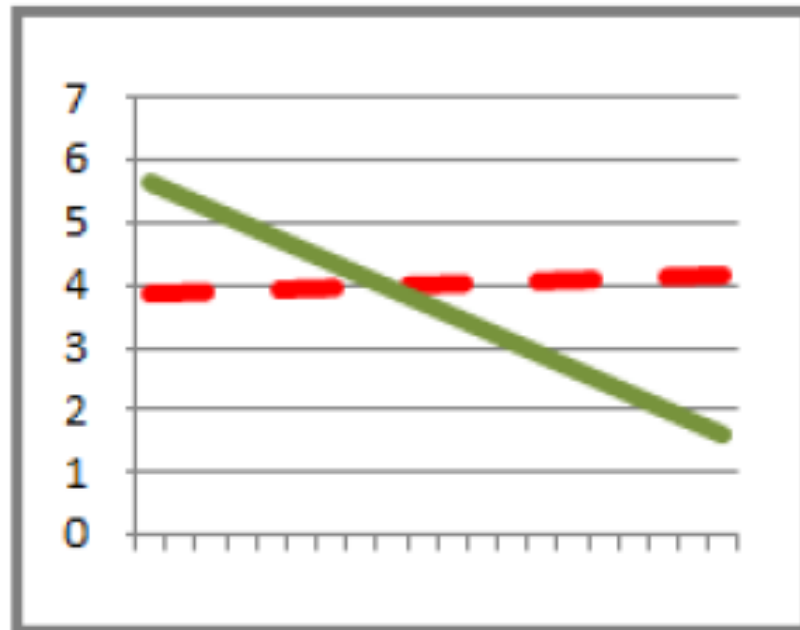




———— Cowlitz County

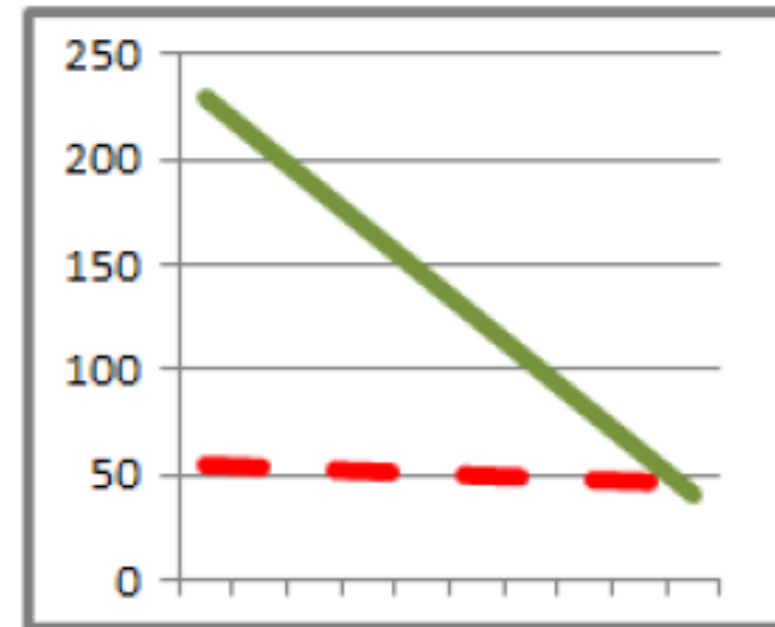
----- Washington State

Child Injury Hospitalizations 1994-2012



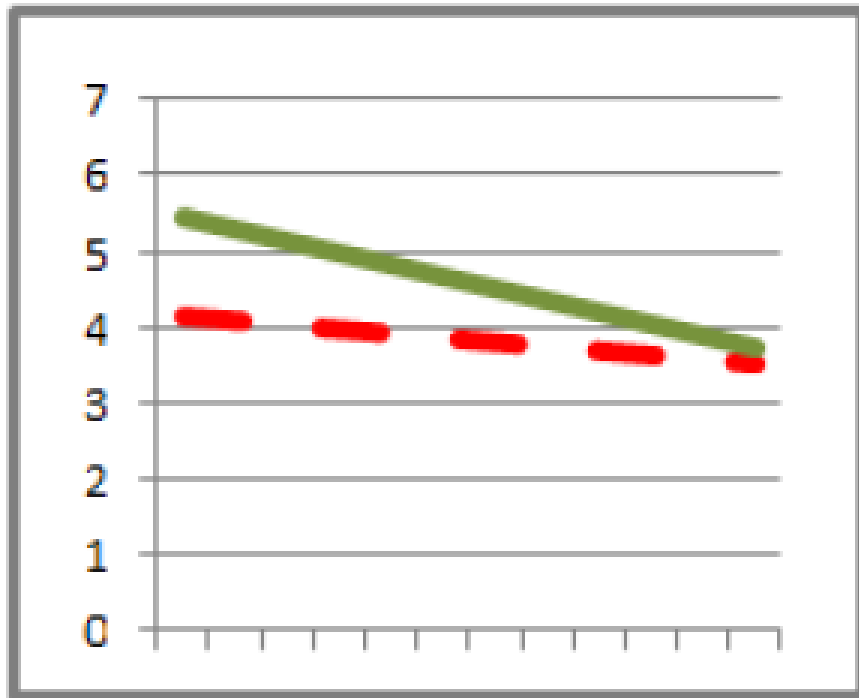
Difference in slopes $p = 0.000$

Suicides & Suicide Attempts 1998-2006



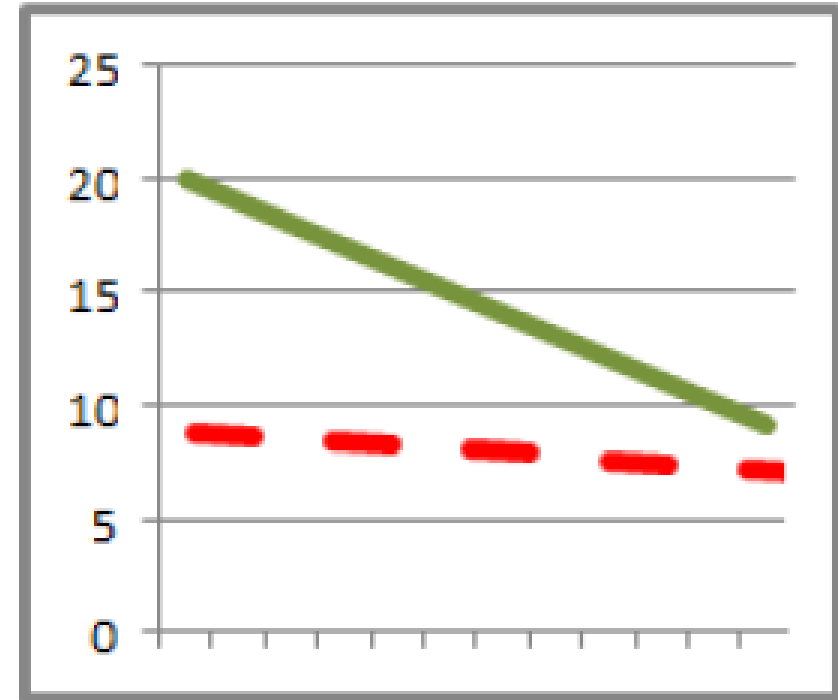
Difference in slopes $p = 0.000$

Hospitalizations
1994-2004



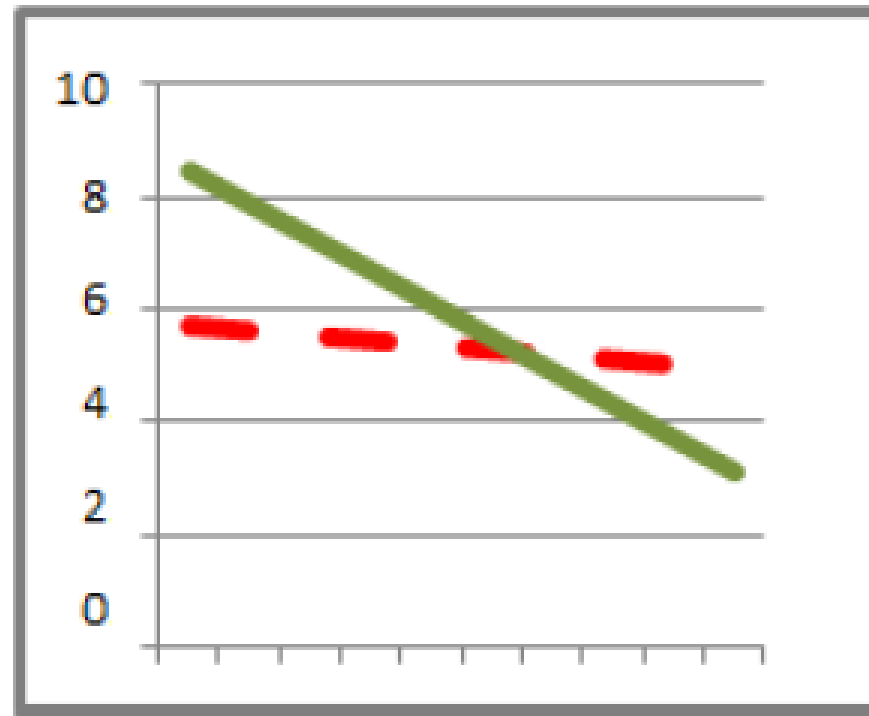
Difference in slopes $p=0.003$

Alcohol Arrests
1994-2004



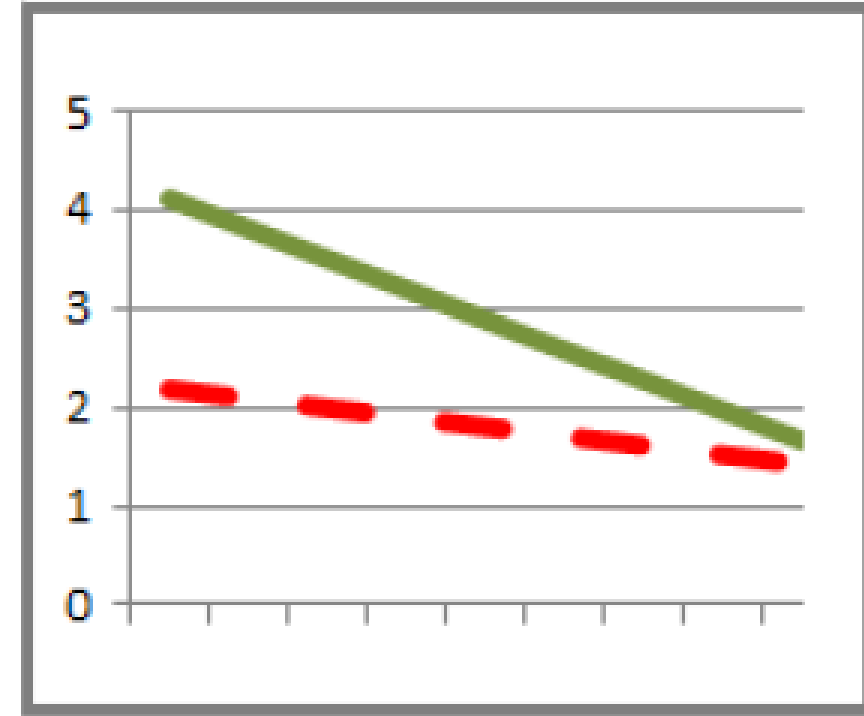
Difference in slopes $p=0.008$

Infant Mortality
1998-2006



Difference in slopes $p=0.043$

Filings for Juvenile Offenses
1998-2006



Difference in slopes $p=0.000$

Public Sector Savings

For a state-wide investment of \$4m/year

Conservative estimate for only

- Pregnancy ages 10-17
- Dropping out of high school
- Out of home placement
- Juvenile Felony crime

\$56m Biennial Savings (\$1/\$7 current biennium savings)

Long term savings: \$296m; long term cost/cost avoidance \$1/\$37

Building Self-Healing Communities

