

# Adverse and Protective Childhood Experiences

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# Learning Objectives

01

Define adverse childhood experiences (ACEs)

02

Describe the negative effects of exposure to ACEs in adolescence and adulthood

03

Explain underlying mechanisms relating ACEs to health problems

04

Identify relevant protective factors to the harmful effects of exposure to ACEs



WHAT DO YOU ALREADY  
KNOW ABOUT ACES?



WHAT DO YOU WANT  
TO KNOW ABOUT ACES?



WHAT QUESTION(S) DO  
YOU HAVE ABOUT ACES?

# Why study ACEs?

**Alcohol** isn't a gateway drug.  
**Nicotine** isn't a gateway drug.  
**Caffeine** isn't a gateway drug.

**Trauma** is the gateway. **Childhood abuse** is the gateway. **Molestation** is the gateway. **Neglect** is the gateway.

Drug abuse, violent behavior, hyper sexuality and self harm are often **symptoms** (not the cause) of much bigger **issues**. And it almost always stems from a **childhood** filled with **trauma**, absent parents, and an abusive family.

But most people are too busy laughing at the **homeless** and **drug addicts** to realize your own **children** could be in their shoes in **15 years**.

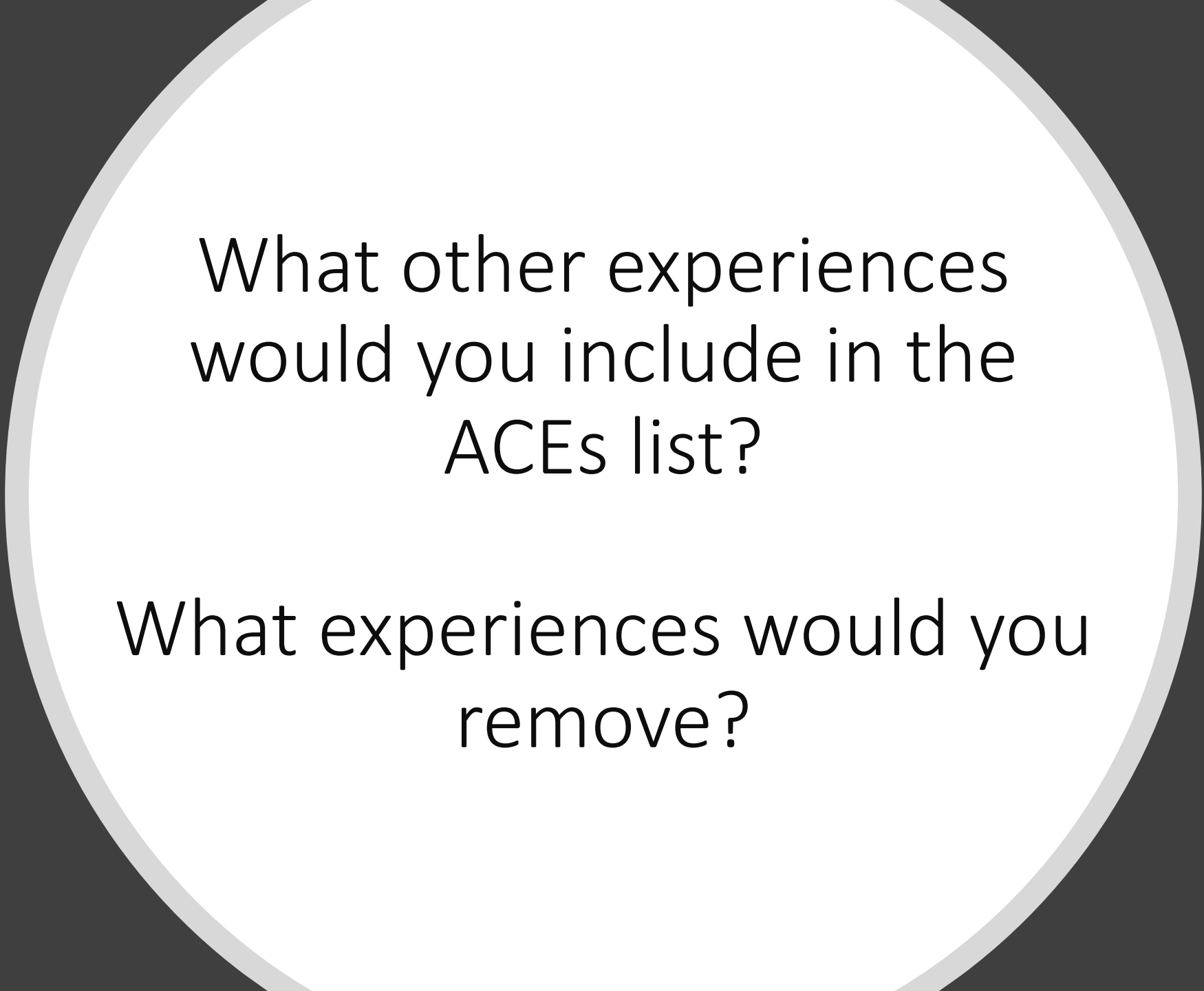


What are ACEs?

ACEs are a set of interrelated stressful or traumatic experiences (Felitti et al., 1998)

Abuse	Neglect	Household dysfunction
<ul style="list-style-type: none"><li>• emotional</li><li>• physical</li><li>• sexual</li></ul>	<ul style="list-style-type: none"><li>• emotional</li><li>• physical</li></ul>	<ul style="list-style-type: none"><li>• domestic violence</li><li>• mental illness,</li><li>• substance use,</li><li>• parental criminal activity/incarceration,</li><li>• parental separation/divorce</li></ul>

Other Types such as community ACEs - witnessing or experiencing violence (Finkelhor et al., 2013)

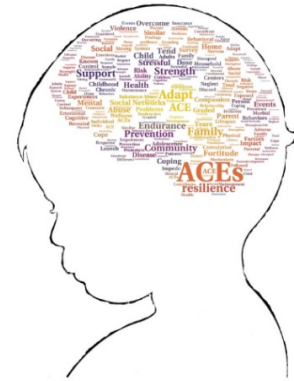


What other experiences  
would you include in the  
ACEs list?

What experiences would you  
remove?

# Expanded ACEs (Cronhelm et al. 2015)

- Additional types:
  - Community violence
  - Racism/discrimination
  - Bullying
  - Peer victimization (physical or sexual)
  - Foster care/adoption



Even more  
Aces?  
(Finkelhor et  
al., 2013)

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Poverty

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Severe medical illness in family

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Parental illness/death

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Below average grades?

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No friends?

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Frequent parental arguing?



SO....

What makes something  
an “ACE” or not?

# ACEs: A concept in search of a definition

- “experiences that are likely to require significant adaptation by an average child and that represent a deviation from the expectable environment” – McLaughlin 2016
- Expectable environment: environmental inputs required for the human brain to develop normally
- Deviation:
  - Absence of expected inputs (neglect)
  - Unexpected inputs that represent threats to physical integrity (violence)

# Beyond the ACE Score: Dimensions of Adversity: Threat and Neglect (McLaughlin 2017)

- Ace Score may not capture Dimensions of ACEs
  - Threat (abuse, witnessing violence)
  - Neglect (physical, emotional, cognitive, parental mental illness/alcoholism)
- Each Dimension may affect different developmental systems
  - Threat – reduce amygdala activity/stress response
  - Neglect – increase PFC and executive function
- Identifying these pathways can help researchers identify targets for intervention

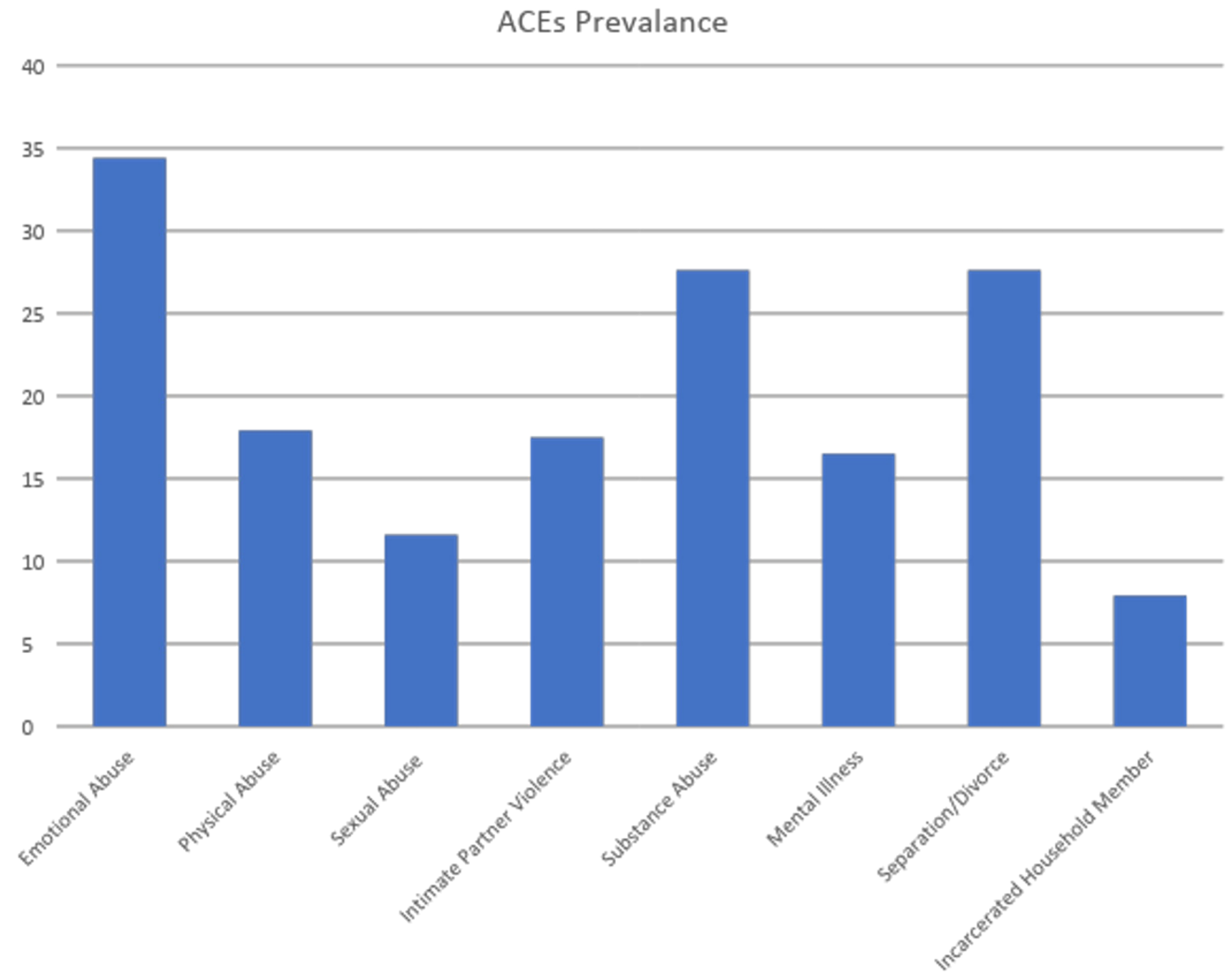


How common are ACEs?

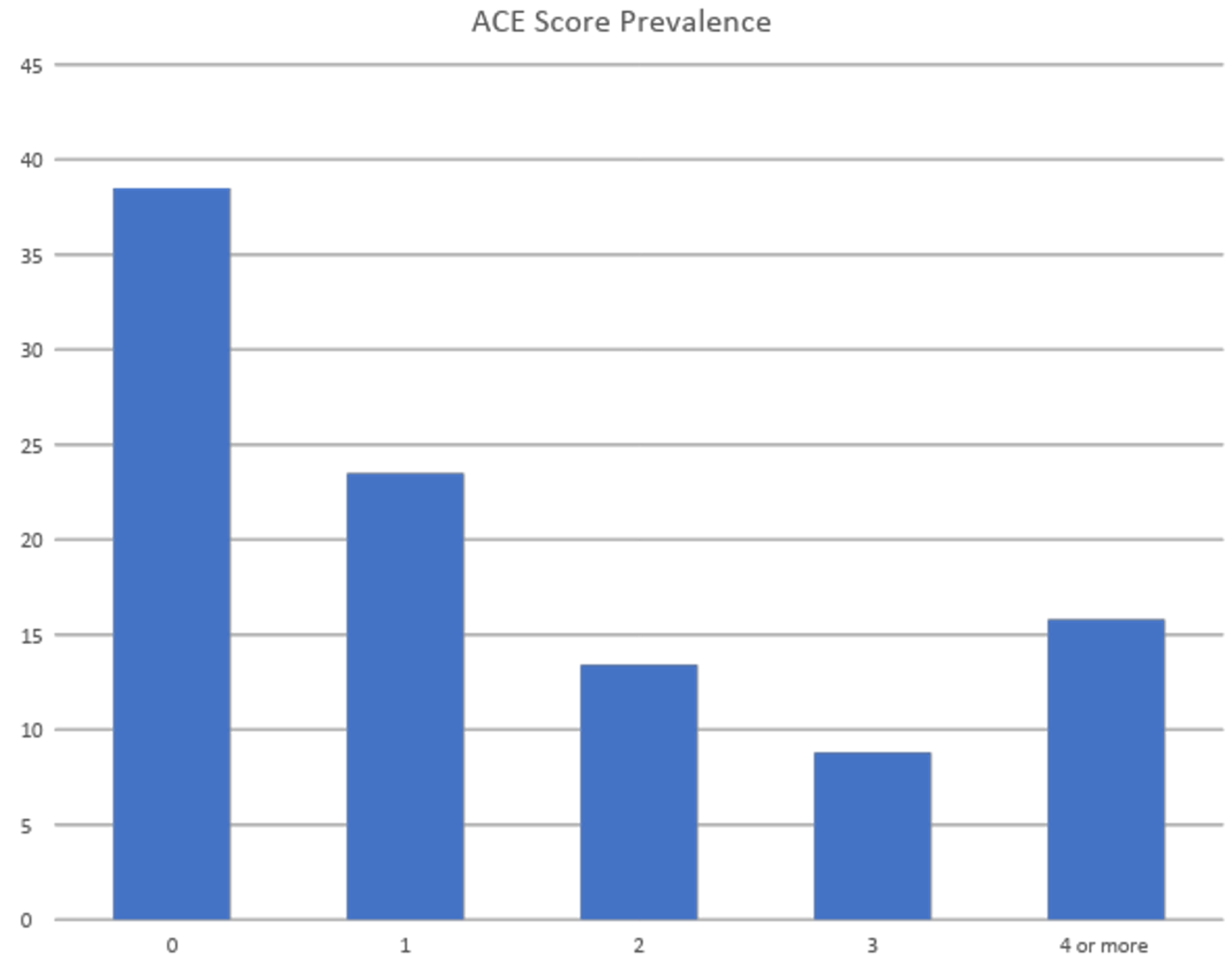
# The day a CDC researcher wept

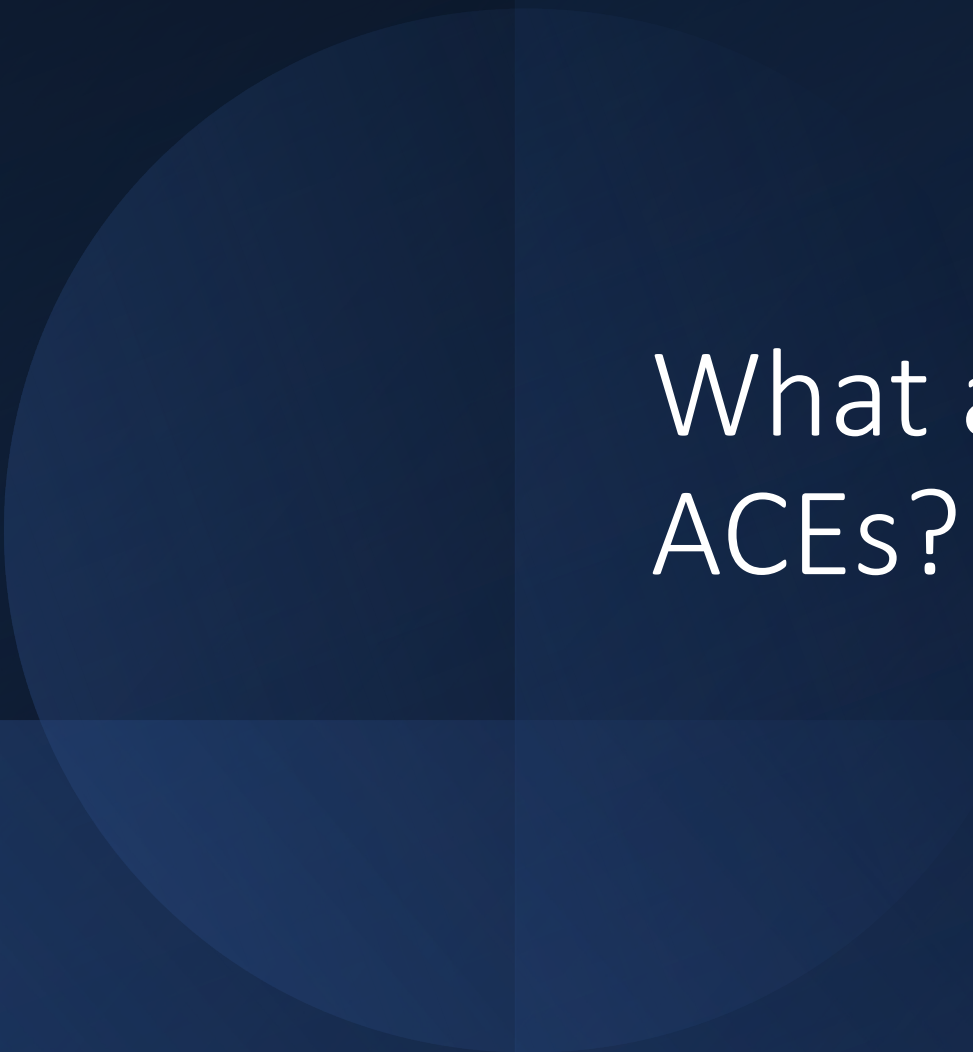
Aces are common. Aces are interrelated. Aces have numerous negative effects.

How  
common are  
ACEs?



# ACE Score Prevalence





What are the effects of  
ACEs?

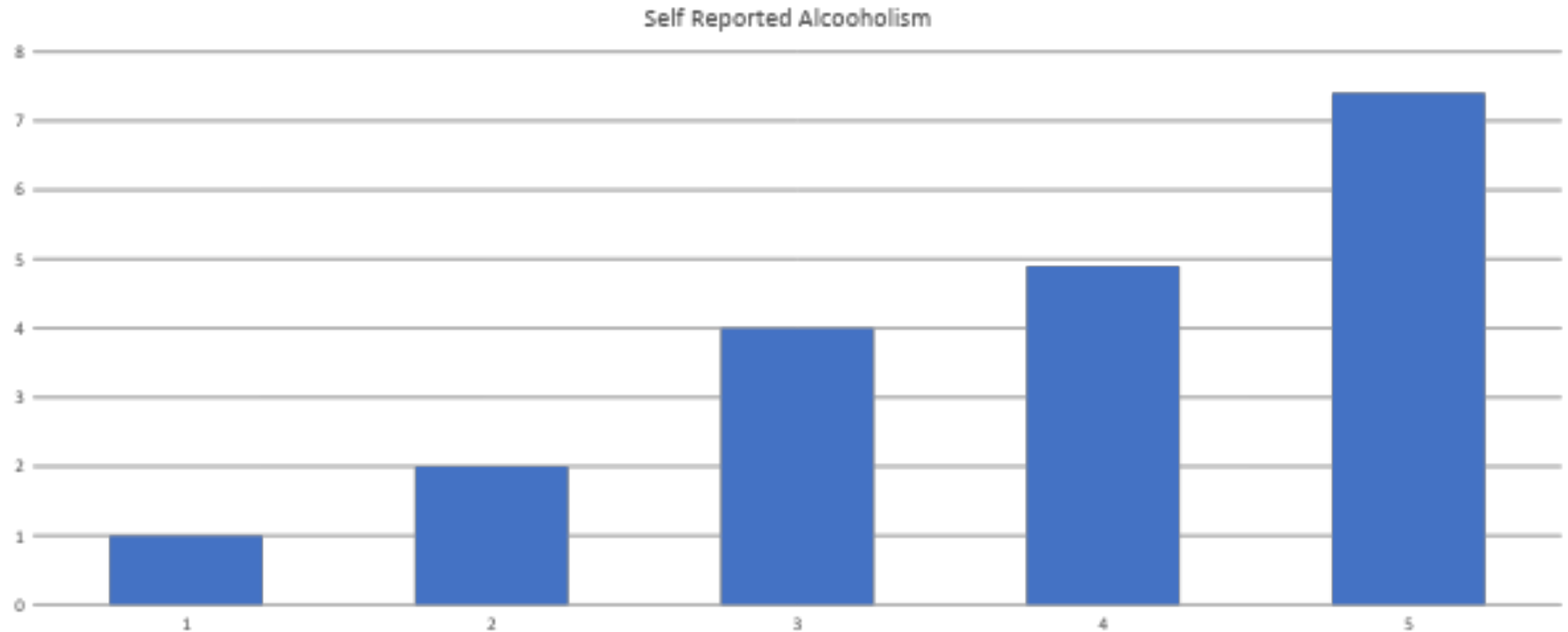
ACEs are associated with numerous health and mental health outcomes:

Exposure to ACEs is associated with an increased risk for (Hughes et al., 2017)

- Cardiovascular disease - 2.05
- Respiratory disease - 3.05
- Anxiety - 3.7
- Depression - 4.4
- Cancer 2.31

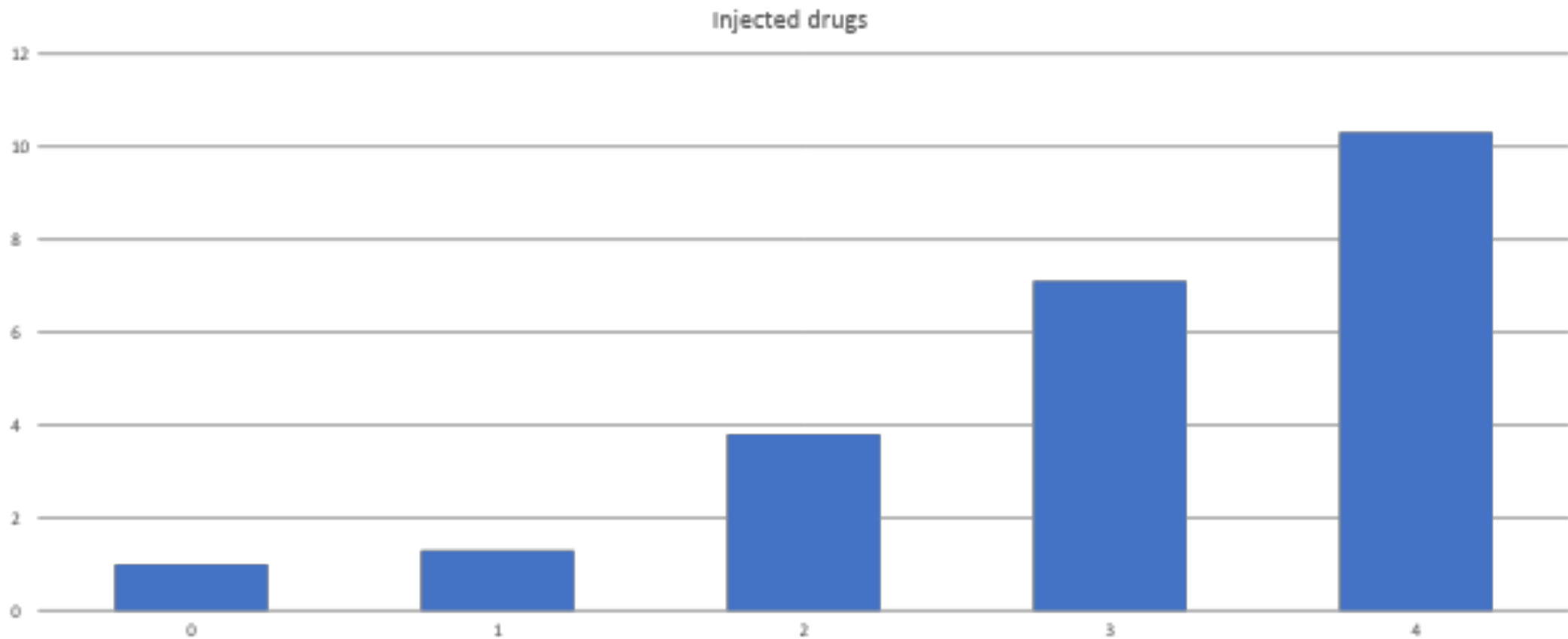
# Self-reported Alcoholism

Felitti et al., 1998



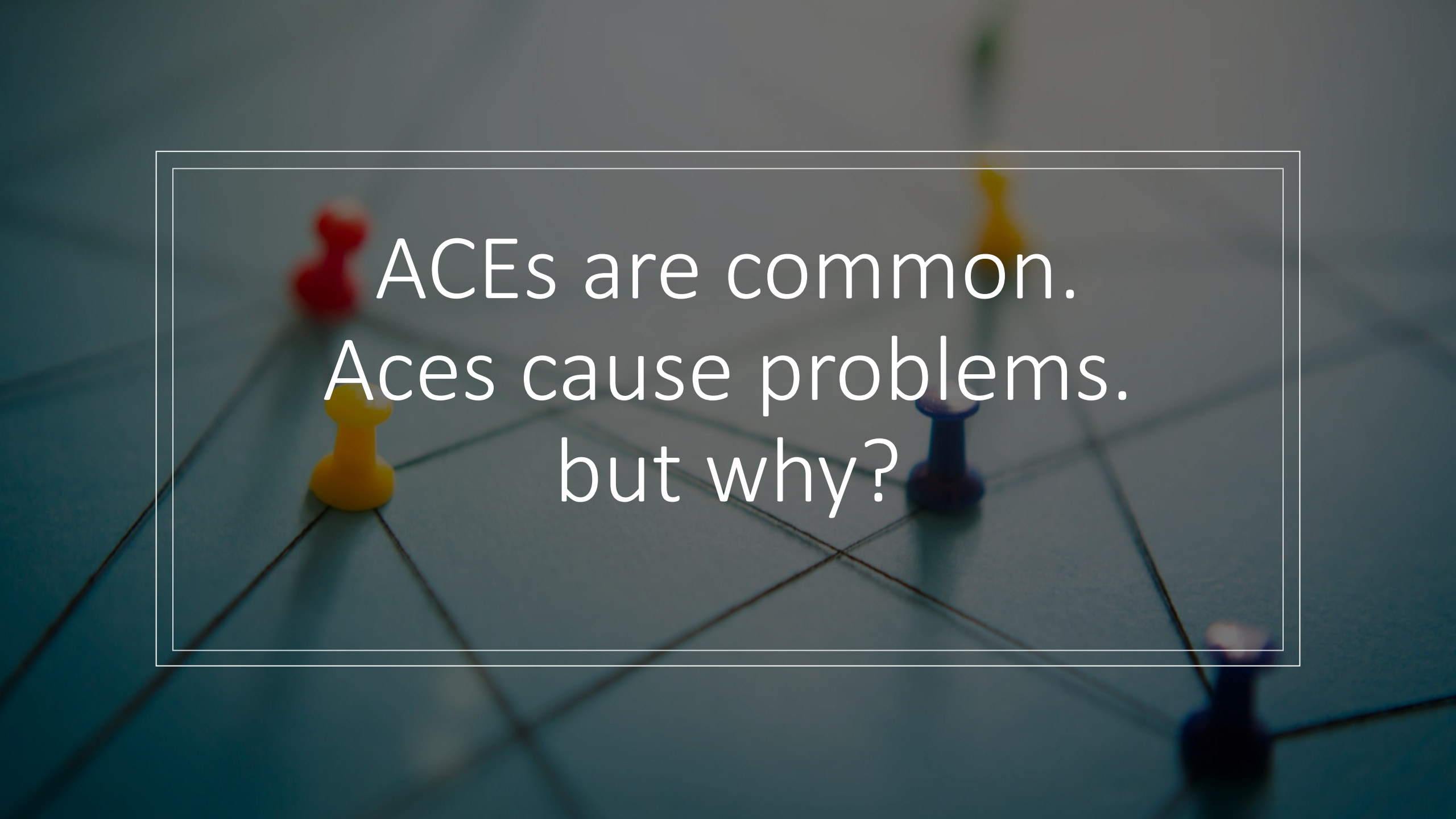
# Injected Drug Use

Felitti et al., 1998



But can you  
sum it up in  
one chart?

Illicit drug use	5.62 (4.46–7.07)
Excluding outliers	5.17 (4.48–5.96)
Problematic alcohol use	5.84 (3.99–8.56)
Excluding outliers	6.86 (5.36–8.78)
Sexually transmitted infections	5.92 (3.21–10.92)
Violence victimisation	7.51 (5.60–10.08)
Violence perpetration	8.10 (5.87–11.18)
Problematic drug use	10.22 (7.62–13.71)
Suicide attempt	30.14 (14.73–61.67)
Excluding outliers	37.48 (22.19–63.31)

The background of the slide is a close-up photograph of a blue surface with a white grid pattern. Several colorful pushpins (red, yellow, blue) are pinned to the grid. A white rectangular border is centered on the slide, enclosing the text.

ACEs are common.  
Aces cause problems.  
but why?

# Why are ACEs associated with negative outcomes?

- ACEs lead to physical and neurological changes (Hays-Grudo et al., 2021)
  - Changes in neuroendocrinological functioning
  - Repeated activation of stress response systems
  - Allostatic Functioning

# Allostatic Load

## Stress response system

- Threat is detected, sympathetic nervous system activated (fight or flight)
  - Triggers inflammation
- Hypothalamic-pituitary-adrenal axis activated (HPA)
  - Mobilize stored energy

Threat subsides – parasympathetic nervous system activates

This is adaptive and necessary for survival!

# Allostatic Load: Biological Embedding of Stress

The cumulative wear and tear of the body from repeated activation of the stress-response system

## Neurological system :

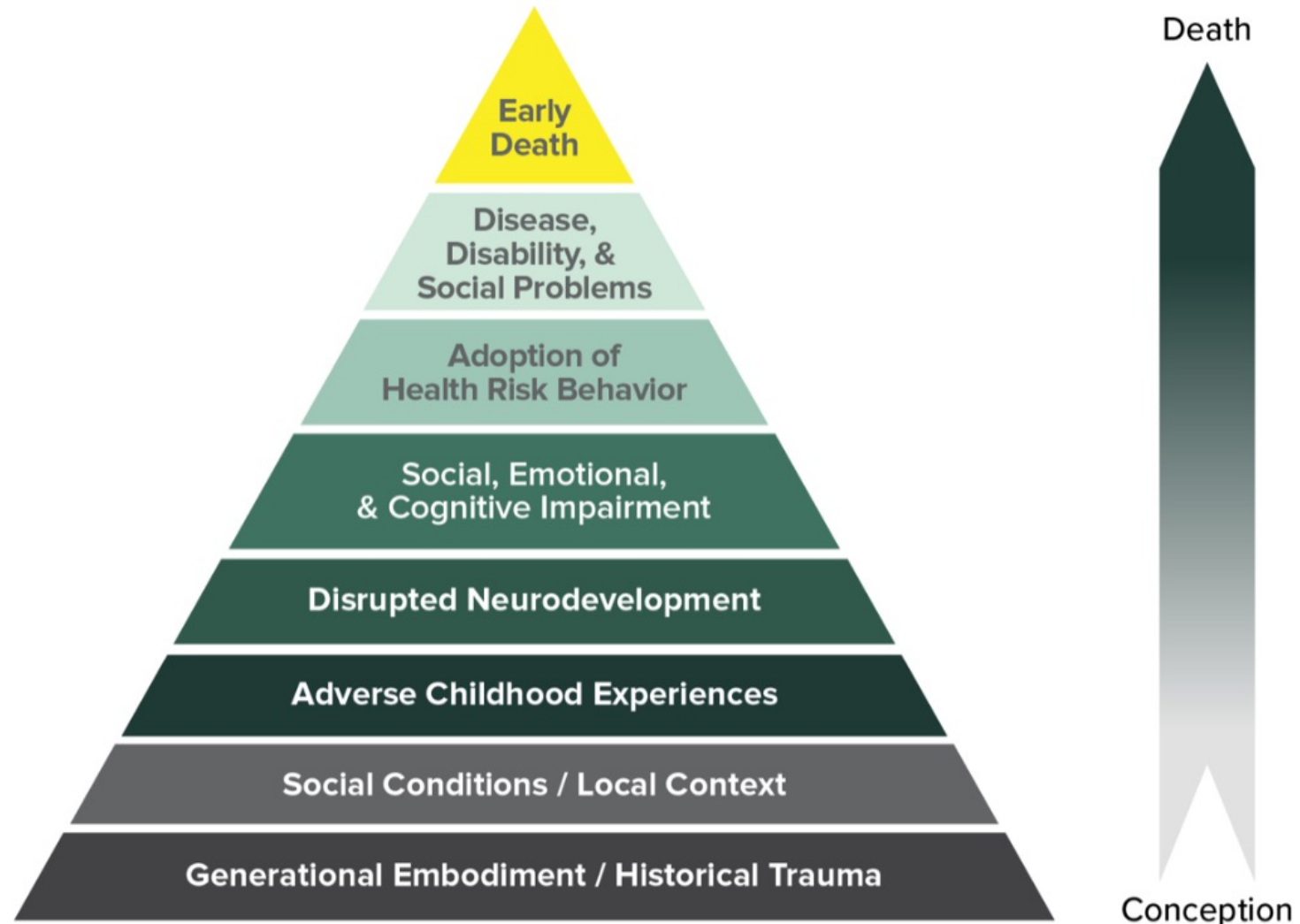
- Changes in prefrontal cortex (impaired attention, difficulties with emotion regulation)
- Enhanced fear response (hypervigilance)

## Endocrine System

- Changes in cortisol functioning

## Immune System

- Increased inflammation levels



Mechanism by which Adverse Childhood Experiences  
Influence Health and Well-being Throughout the Lifespan

# Why are ACEs associated with negative outcomes?

Exposure to traumas creates feelings of anger, anxiety or depression

Smoking, alcohol and drug use are used to cope with these feelings

Alcohol and drug use is therefore a “problem” but a solution that provides immediate relief but causes long-term problems (Felitti et al., 1998)

Practice!

Describe to a friend (or someone sitting next to you)

- What are ACEs?
- How common are they?
- What effect do they have?
- Why do they have that effect?

Be sure to take turns

## Summary so far

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Aces are *interrelated* stressful/traumatic events that occur during childhood (< 18)

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Aces can alter stress response and brain development

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Aces are associated with an increased risk of many problems, esp. substance use

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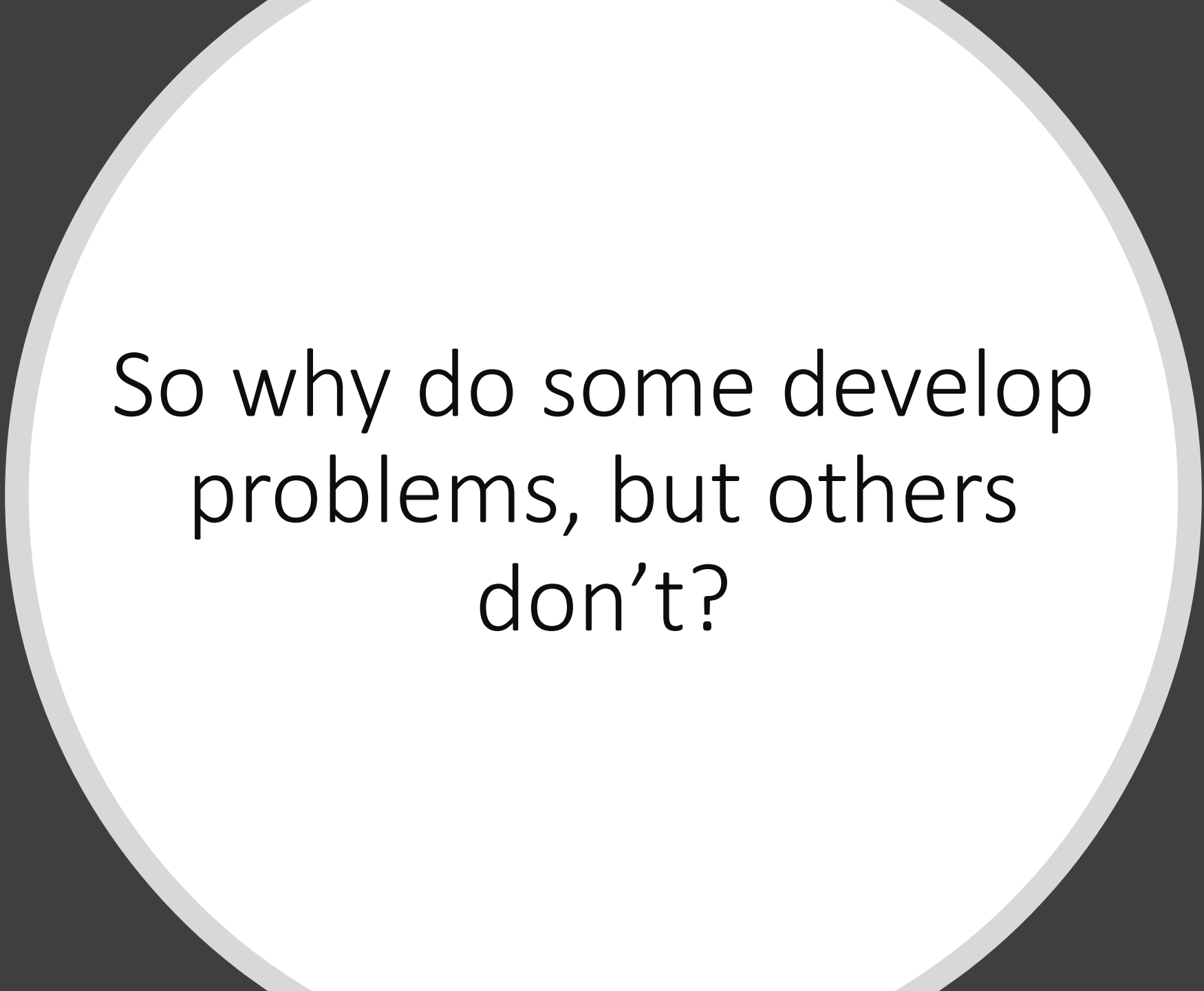
BUT....

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# Is this the whole story?

Health problem	Number of categories	Sample size (N) <sup>a</sup>	Prevalence (%) <sup>b</sup>	Adjusted odds ratio <sup>c</sup>
Considers self an alcoholic	0	3,841	2.9	1.0
	1	1,993	5.7	2.0
	2	1,042	10.3	4.0
	3	586	11.3	4.9
	4 or more	540	16.1	7.4
	Total	8,002	5.9	—
Ever used illicit drugs	0	3,856	6.4	1.0
	1	1,998	11.4	1.7
	2	1,045	19.2	2.9
	3	589	21.5	3.6
	4 or more	541	28.4	4.7
	Total	8,029	11.6	—
Ever injected drugs	0	3,855	0.3	1.0
	1	1,996	0.5	1.3
	2	1,044	1.4	3.8
	3	587	2.3	7.1
	4 or more	540	3.4	10.3
	Total	8,022	0.8	—

Source: Felitti et al. (1998))



So why do some develop  
problems, but others  
don't?

# What is resilience?

In small-ish groups come up with a definition of what “resilience” is

Then, work to identify and list some potential protective factors that might reduce risk from ACEs



Is resilience a trait?

An outcome?

In the individual?

Their environment?

Resilience is  
dynamic and  
exists in the  
developmental  
system

- Resilience is successful adaptation following adversity (Masten 2007)
- Resilience is systemic, dynamic, and exists in the developmental system (Lerner 2006)
- Chronic exposure to ACEs may impair multiple developmental systems (Hays-Grudo et al. 2021) compromising fundamental adaptive systems (Masten 2001) leading to long term problems
- However, these systems are prime candidates for identifying factors that promote resilience to ACEs

# Protective and Compensatory Experiences

## Positive Relationships

- Parental love
- Positive peer relations
- Non-parental adult mentor
- Belonging to a social group
- Volunteering in community

## Access to Resources

- Living in a safe home
- Quality education
- Having a hobby
- Involvement in team sports
- Consistent and fair family routines and rules

# Need to Consider both ACES and PACES

ACES are not destiny, positive experiences can compensate and counteract ACEs

Screening PACEs can help to identify and strengthen protective factors

- Shift conversation from deficits to include and build on strengths

Provide simple targets of intervention

- Establish bedtime and other routines
- Identify opportunities to join groups, community or to volunteer

Iceland did this to reduce teen alcohol use!

## To Help Prevent ACEs, support Parents

“The single most important factor for healthy development is a strong secure attachment to primary caregiver

- Effective parenting presupposes caregivers own wellbeing”

Children with ACEs and MH problems, were 2x as resilient when parents reported lower parenting stress

# To Help Prevent ACEs, support Parents

## Safe Stable Nurturing Relationships

- Central for brain, social, emotional and physical development
- facilitate self-regulation through co-regulation

## Safe Stable Nurturing Relationships Require Parental:

- emotion regulation (reduce stress reactivity)
- emotional availability –(parental aces → child MH only with low emotional availability)

# To Help Prevent ACEs, support Parents

1

Normalize Parents working through own ACEs

- Identify own ACEs and effects on parenting
- Reduce stress reactivity (MBMB)
- Extinguish Ghosts in the Nursery

2

Support parents developing parental skills

- parent training (Triple P, PCIT, Incredible Years)

3

Provide material support

- access to childcare, early childhood education, parent friendly policies

# Therapeutic Interventions Targeting Consequences of ACEs

Many EBTs exist that are trauma-informed and can address ACEs

- E.g. TF-CBT, ABFT, CPP, PCIT, many others

Commonalities across interventions:

- reduce effects of dysregulated stress system
- Develop self-regulation skills
- Somatic awareness (interoception)

Caregiver involvement

- Strengthen relationship, foster stability in home, develop capacity for co-regulation

# Summary

- ACEs are stressful experiences that cause biobehavioral adaptation leading to numerous negative outcomes
- Protective Experiences can Compensate Adversity, and increase resilience
- To reduce ACEs, support parents
- Many interventions exist to combat effects of ACEs
- ACEs are a public health problem that require whole level community support

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