



Adverse Childhood Experiences and the Effects on Pediatric Health Outcomes



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Disclosures

- Financial
 - None
- Off Label use of Medications
 - None

Learning Objectives

- Define adverse childhood experiences (ACEs) and the three categories of adversity
- Recognize the relationship between early adverse childhood experiences and negative health and well-being outcomes from childhood through adulthood
- Recall how early exposure to ACEs and toxic stress can lead to permanent changes in brain structure and function
- Summarize what can be done to help mitigate the effects of ACEs
- Consider screening for ACEs in your practice to assess for future health concerns and behaviors

M.B.

- 12 y/o biracial male in foster care (2 younger siblings)
- Has witnessed intimate partner violence between parents for first 8 years of life, then between mother and boyfriends for last 3 years
- Father is a drug addicted and has bipolar. Has been incarcerated multiple times for assault, drug possession/distribution, attempted murder of mother which MB witnessed
- Mother is drug/alcohol addicted, suffers from depression. She has exchanged sex for drugs.
- He has experienced: homelessness, food insecurity, severe poverty, unsafe neighborhoods, and neglect. He has witnessed violence, physical/sexual/emotional abuse.
- Poor academic achievement, behavioral problems, PTSD, ADHD, asthma, obesity

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Adverse Childhood Experiences (ACEs)

- Term given to describe all types of **abuse**, **neglect**, and other **traumatic** experiences that occur before age 18
- Divided into three categories of adversity
 1. Abuse
 2. Neglect
 3. Household stressors/challenges
 4. Community and systemic sources

The Origin of the ACEs Study

- Dr. Vincent Felitti was mystified why patients in his obesity clinic had 50% dropout rate
- Interviewed study dropouts with standard questions
- Misspoke on question and the positive response about sexual abuse opened his eyes to ACEs
- Criticized by obesity experts when he presented his findings
- Met CDC epidemiologist, Dr. Robert Anda and they designed the ACEs study



ACEs Study

- Kaiser Permanente-CDC collaboration between 1995-1997
- Two waves of data collection
- 17,000 people survey who completed physical exams and detailed biopsychosocial questionnaires
- Each ACE counted as 1 point towards total score

Childhood Exposure	Subcategory
Abuse	Physical Sexual Psychological
Neglect	Emotional Physical
Household Stressors	Substance abuse Mental illness Intimate partner violence Criminal behavior Divorce/separation

ACE Definitions

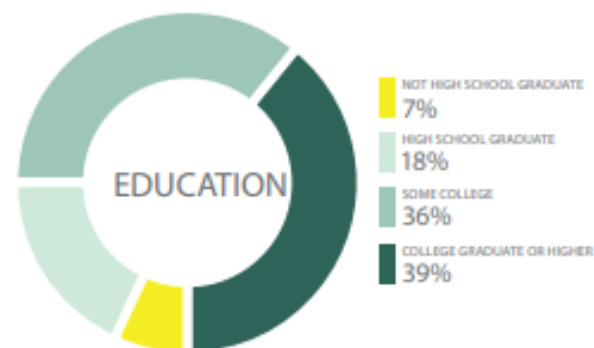
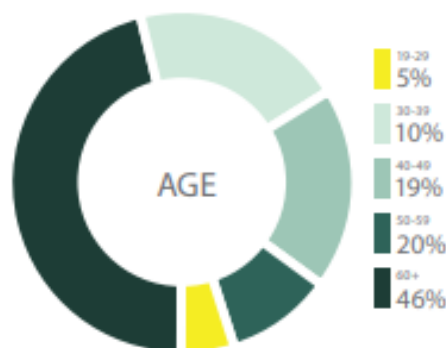
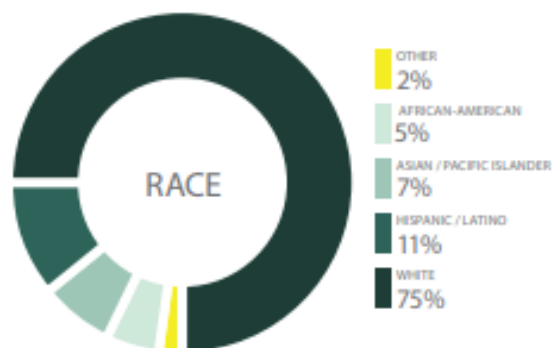
- Abuse
 - **Emotional abuse:** A parent, stepparent, or adult living in your home swore at you, insulted you, put you down, or acted in a way that made you afraid that you might be physically hurt.
 - **Physical abuse:** A parent, stepparent, or adult living in your home pushed, grabbed, slapped, threw something at you, or hit you so hard that you had marks or were injured.
 - **Sexual abuse:** An adult, relative, family friend, or stranger who was at least 5 years older than you ever touched or fondled your body in a sexual way, made you touch his/her body in a sexual way, attempted to have any type of sexual intercourse with you.
- Household Challenges
 - **Mother treated violently:** Your mother or stepmother was pushed, grabbed, slapped, had something thrown at her, kicked, bitten, hit with a fist, hit with something hard, repeatedly hit for over at least a few minutes, or ever threatened or hurt by a knife or gun by your father (or stepfather) or mother's boyfriend.
 - **Household substance abuse:** A household member was a problem drinker or alcoholic or a household member used street drugs.
 - **Mental illness in household:** A household member was depressed or mentally ill or a household member attempted suicide.
 - **Parental separation or divorce:** Your parents were ever separated or divorced.
 - **Criminal household member:** A household member went to prison.
- Neglect¹
 - **Emotional neglect:** Someone in your family helped you feel important or special, you felt loved, people in your family looked out for each other and felt close to each other, and your family was a source of strength and support.²
 - **Physical neglect:** There was someone to take care of you, protect you, and take you to the doctor if you needed it², you didn't have enough to eat, your parents were too drunk or too high to take care of you, and you had to wear dirty clothes.

¹Collected during Wave 2 only.

Participant Demographics

WHO PARTICIPATED IN THE ACE STUDY?

Between 1995 and 1997, over 17,000 people receiving physical exams completed confidential surveys containing information about their childhood experiences and current health status and behaviors. The information from these surveys was combined with results from their physical exams to form the study's findings.

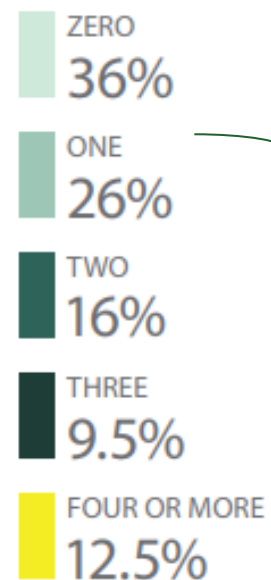
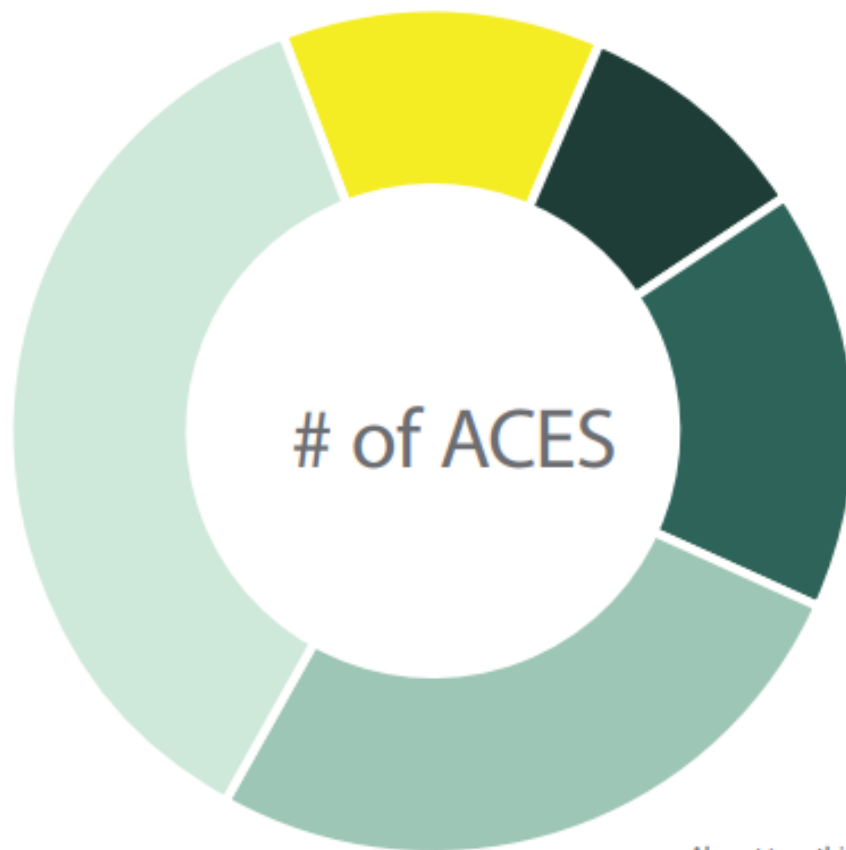


*Participants in this study reflected a cross-section of middle-class American adults.

Content source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, VetoViolence

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HOW COMMON ARE ACES?



**2/3 of adults
reported $1 \leq$
ACE**

Almost two-thirds of adults surveyed reported at least one Adverse Childhood Experience – and the majority of respondents who reported at least one ACE reported more than one.

Content source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention

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ACE Score Prevalence for CDC-Kaiser ACE Study Participants by Sex, Waves 1 and 2.

Number of Adverse Childhood Experiences (ACE Score)	Women Percent(N = 9,367)	Men Percent (N = 7,970)	Total Percent (N = 17,337)
0	34.5%	38.0%	36.1%
1	24.5%	27.9%	26.0%
2	15.5%	16.4%	15.9%
3	10.3%	8.5%	9.5%
4 or more	15.2%	9.2%	12.5%

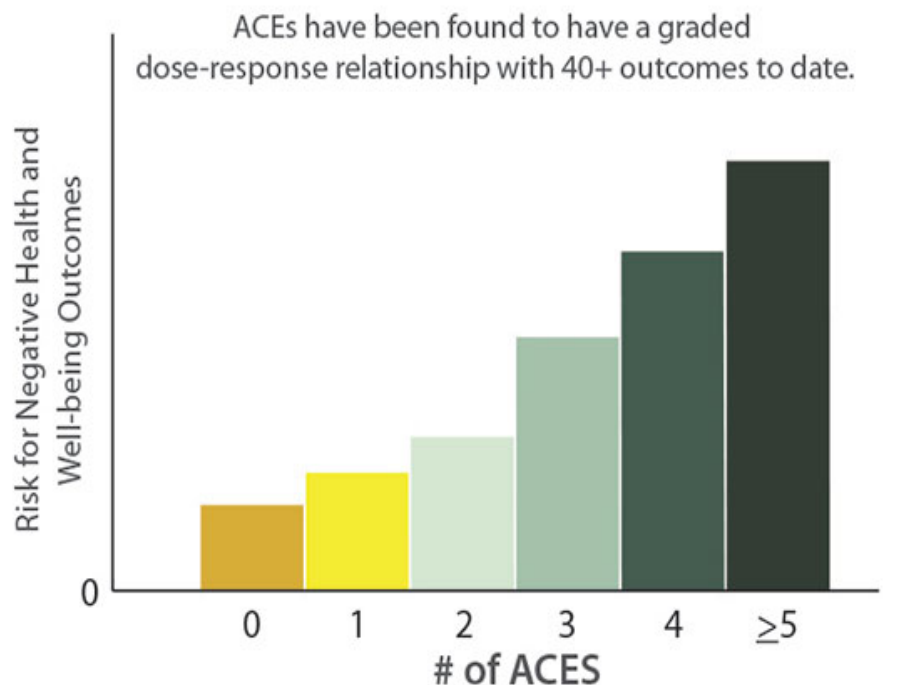
Note: Research papers that use Wave 1 and/or Wave 2 data may contain slightly different prevalence estimates.

Source: Centers for Disease Control and Prevention, Kaiser Permanente. The ACE Study Survey Data [Unpublished Data].

Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2016.

Graded Dose-Response Relationship Between ACEs and Negative outcomes

Association between ACEs and Negative Outcomes



*This pattern holds for the 40+ outcomes, but the exact risk values vary depending on the outcome.

- As the dose of the stressor increases → the intensity of the outcome also increases
- Higher # of ACEs → higher risk of medical, mental, and social problems as an adult and many other health concerns in children

Graded Dose-Response Between ACE Score and Negative Health Outcomes Throughout Lifetime

Physical Health Conditions	Mental Health Conditions	Health Risk Behaviors
Ischemic heart disease Diabetes COPD Cancer Obesity Liver disease Headaches Sexually transmitted infections (STIs) Autoimmune disease Broken bones Disability Mortality	Depression Suicide Anxiety PTSD Hallucinations	Smoking Early initiation of smoking Alcohol abuse Drug abuse Multiple sexual partners Adolescent and unintended pregnancies
	Psychosocial	
	Risk for intimate partner and sexual violence Health related quality of life Poor work performance Lower income	Unemployment Lower educational attainment Blue = Top 10 leading causes of death in US

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Content source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention

Participants with an ACE Score ≥ 4 are at Highest Risk for Poor Outcomes in Adulthood

- 4-to-12-fold increased risk for health risk behaviors
 - Smoking, drug and alcohol abuse, early sexual behavior, STIs, > 50 sexual partners
- 1.4-to-1.6-fold increased risk of adult disease

Table 5. Number of categories of adverse childhood exposure and the prevalence and risk (adjusted odds ratio) of health risk factors including alcohol or drug abuse, high lifetime number of sexual partners, or history of sexually transmitted disease

Health problem	Number of categories	Sample size (N) ^a	Prevalence (%) ^b	Adjusted odds ratio ^c	95% confidence interval
Considers self an alcoholic	0	3,841	2.9	1.0	Referent
	1	1,993	5.7	2.0	(1.6–2.7)
	2	1,042	10.3	4.0	(3.0–5.3)
	3	586	11.3	4.9	(3.5–6.8)
	4 or more	540	16.1	7.4	(5.4–10.2)
	Total	8,002	5.9	—	—
Ever used illicit drugs	0	3,856	6.4	1.0	Referent
	1	1,998	11.4	1.7	(1.4–2.0)
	2	1,045	19.2	2.9	(2.4–3.6)
	3	589	21.5	3.6	(2.8–4.6)
	4 or more	541	28.4	4.7	(3.7–6.0)
	Total	8,029	11.6	—	—
Ever injected drugs	0	3,855	0.3	1.0	Referent
	1	1,996	0.5	1.3	(0.6–3.1)
	2	1,044	1.4	3.8	(1.8–8.2)
	3	587	2.3	7.1	(3.3–15.5)
	4 or more	540	3.4	10.3	(4.9–21.4)
	Total	8,022	0.8	—	—
Had 50 or more intercourse partners	0	3,400	3.0	1.0	Referent
	1	1,812	5.1	1.7	(1.3–2.3)
	2	926	6.1	2.3	(1.6–3.2)
	3	526	6.3	3.1	(2.0–4.7)
	4 or more	474	6.8	3.2	(2.1–5.1)
	Total	7,138	4.4	—	—
Ever had a sexually transmitted disease ^d	0	3,848	5.6	1.0	Referent
	1	2,001	8.6	1.4	(1.1–1.7)
	2	1,044	10.4	1.5	(1.2–1.9)
	3	588	13.1	1.9	(1.4–2.5)
	4 or more	542	16.7	2.5	(1.9–3.2)
	Total	8023	8.2	—	—

^aSample sizes will vary due to incomplete or missing information about health problems.

^bPrevalence estimates are adjusted for age.

^cOdds ratios adjusted for age, gender, race, and educational attainment.

^dIndicates information recorded in the patient's chart before the study questionnaire was mailed.

Table 4. Number of categories of adverse childhood exposure and the adjusted odds of risk factors including current smoking, severe obesity, physical inactivity, depressed mood, and suicide attempt

Health problem	Number of categories	Sample size (N) ^a	Prevalence (%) ^b	Adjusted odds ratio ^c	95% confidence interval
Current smoker ^d	0	3,836	6.8	1.0	Referent
	1	2,005	7.9	1.1	(0.9–1.4)
	2	1,046	10.3	1.5	(1.1–1.8)
	3	587	13.9	2.0	(1.5–2.6)
	4 or more	544	16.5	2.2	(1.7–2.9)
	Total	8,018	8.6	—	—
Severe obesity ^d (BMI ≥ 35)	0	3,850	5.4	1.0	Referent
	1	2,004	7.0	1.1	(0.9–1.4)
	2	1,041	9.5	1.4	(1.1–1.9)
	3	590	10.3	1.4	(1.0–1.9)
	4 or more	543	12.0	1.6	(1.2–2.1)
	Total	8,028	7.1	—	—
No leisure-time physical activity	0	3,634	18.4	1.0	Referent
	1	1,917	22.8	1.2	(1.1–1.4)
	2	1,006	22.0	1.2	(1.0–1.4)
	3	559	26.6	1.4	(1.1–1.7)
	4 or more	523	26.6	1.3	(1.1–1.6)
	Total	7,639	21.0	—	—
Two or more weeks of depressed mood in the past year	0	3,799	14.2	1.0	Referent
	1	1,984	21.4	1.5	(1.3–1.7)
	2	1,036	31.5	2.4	(2.0–2.8)
	3	584	36.2	2.6	(2.1–3.2)
	4 or more	542	50.7	4.6	(3.8–5.6)
	Total	7,945	22.0	—	—
Ever attempted suicide	0	3,852	1.2	1.0	Referent
	1	1,997	2.4	1.8	(1.2–2.6)
	2	1,048	4.3	3.0	(2.0–4.6)
	3	587	9.5	6.6	(4.5–9.8)
	4 or more	544	18.3	12.2	(8.5–17.5)
	Total	8,028	3.5	—	—

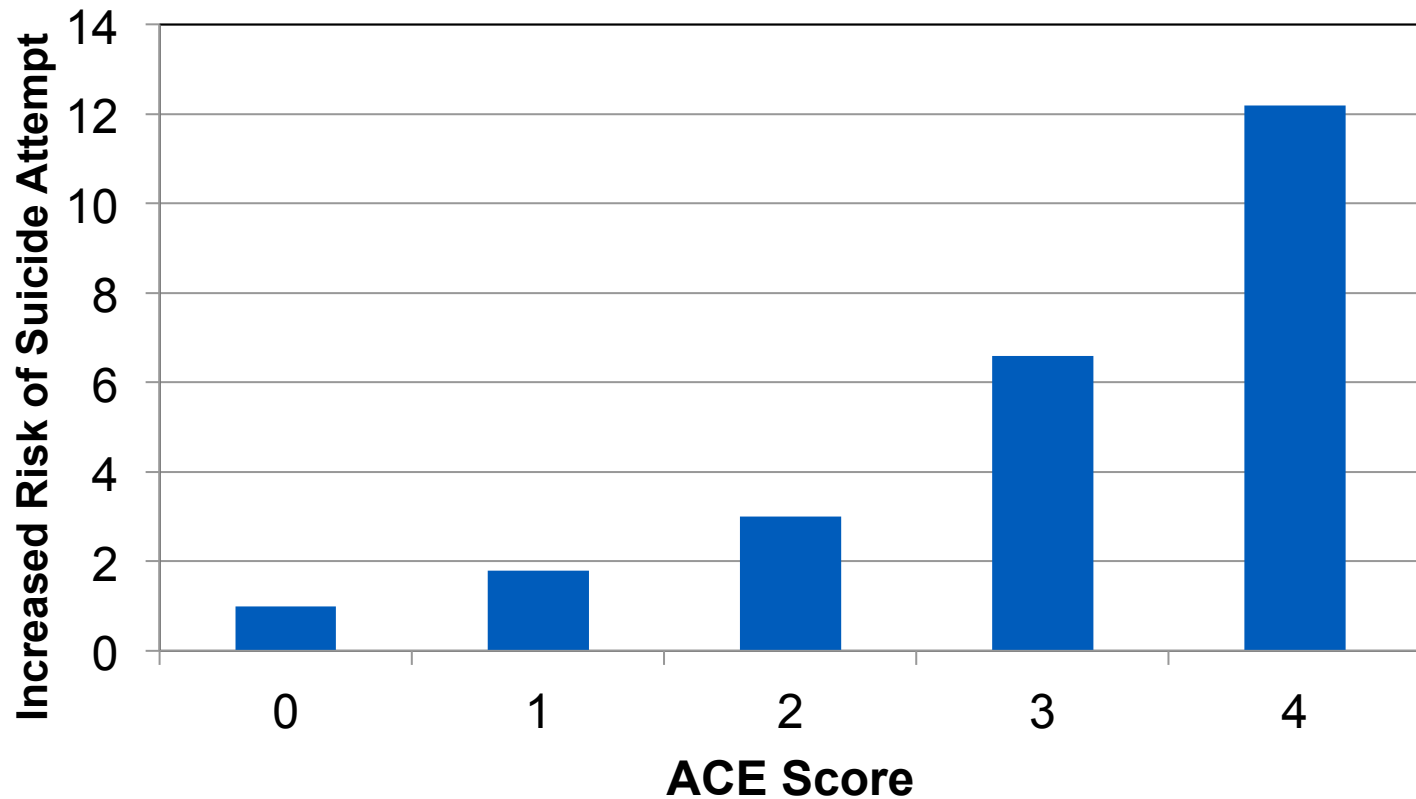
^aSample sizes will vary due to incomplete or missing information about health problems.

^bPrevalence estimates are adjusted for age.

^cOdds ratios adjusted for age, gender, race, and educational attainment.

^dIndicates information recorded in the patient's chart before the study questionnaire was mailed.

Association Between ACE Score and Increased Risk of Suicide Attempt



Adapted from Felitti et. al. 1998

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Table 7. Number of categories of adverse childhood exposure and the prevalence and risk (adjusted odds ratio) of heart attack, cancer, stroke, COPD, and diabetes

Disease condition ^d	Number of categories	Sample size (N) ^a	Prevalence (%) ^b	Adjusted odds ratio ^c	95% confidence interval
Ischemic heart disease	0	3,859	3.7	1.0	Referent
	1	2,009	3.5	0.9	(0.7–1.3)
	2	1,050	3.4	0.9	(0.6–1.4)
	3	590	4.6	1.4	(0.8–2.4)
	4 or more	545	5.6	2.2	(1.3–3.7)
	Total	8,022	3.8	—	—
Any cancer	0	3,842	1.9	1.0	Referent
	1	1,995	1.9	1.2	(1.0–1.5)
	2	1,043	1.9	1.2	(1.0–1.5)
	3	588	1.9	1.0	(0.7–1.5)
	4 or more	543	1.9	1.9	(1.3–2.7)
	Total	8,011	1.9	—	—
Stroke	0	3,832	2.6	1.0	Referent
	1	1,993	2.4	0.9	(0.7–1.3)
	2	1,042	2.0	0.7	(0.4–1.3)
	3	588	2.9	1.3	(0.7–2.4)
	4 or more	543	4.1	2.4	(1.3–4.3)
	Total	7,998	2.6	—	—
Chronic bronchitis or emphysema	0	3,758	2.8	1.0	Referent
	1	1,939	4.4	1.6	(1.2–2.1)
	2	1,009	4.4	1.6	(1.1–2.3)
	3	565	5.7	2.2	(1.4–3.3)
	4 or more	512	8.7	3.9	(2.6–5.8)
	Total	7,783	4.0	—	—
Diabetes	0	3,850	4.3	1.0	Referent
	1	2,002	4.1	1.0	(0.7–1.3)
	2	1,046	3.9	0.9	(0.6–1.3)
	3	587	5.0	1.2	(0.8–1.9)
	4 or more	542	5.8	1.6	(1.0–2.5)
	Total	8,027	4.3	—	—

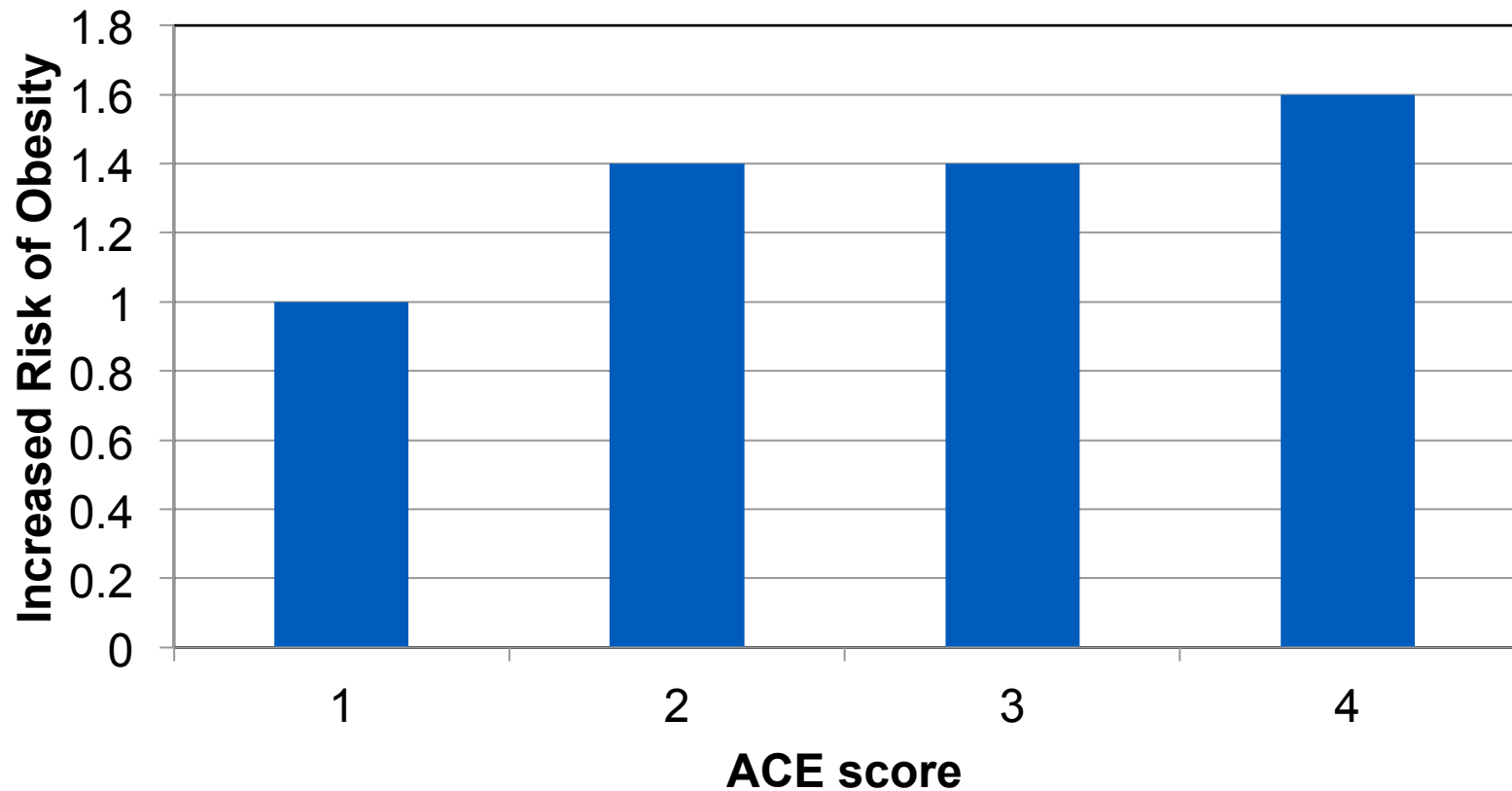
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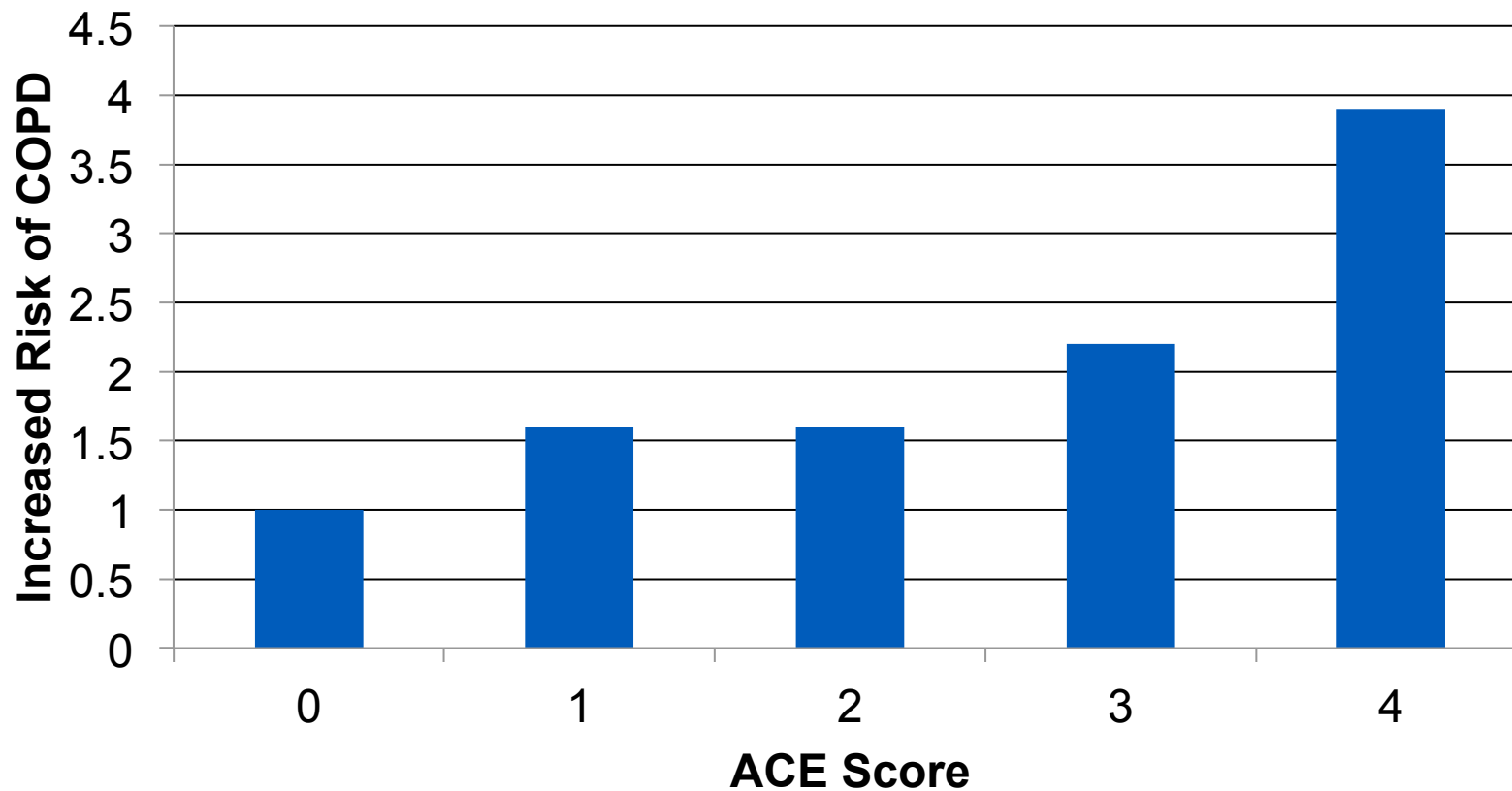
Association Between ACE Score and Risk of Severe Obesity (BMI > 35)



Adapted from Felitti et al. 1998

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Association Between ACE Score and Increased Risk of COPD



Adapted from Felitti et al. 1998

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ACEs are interrelated

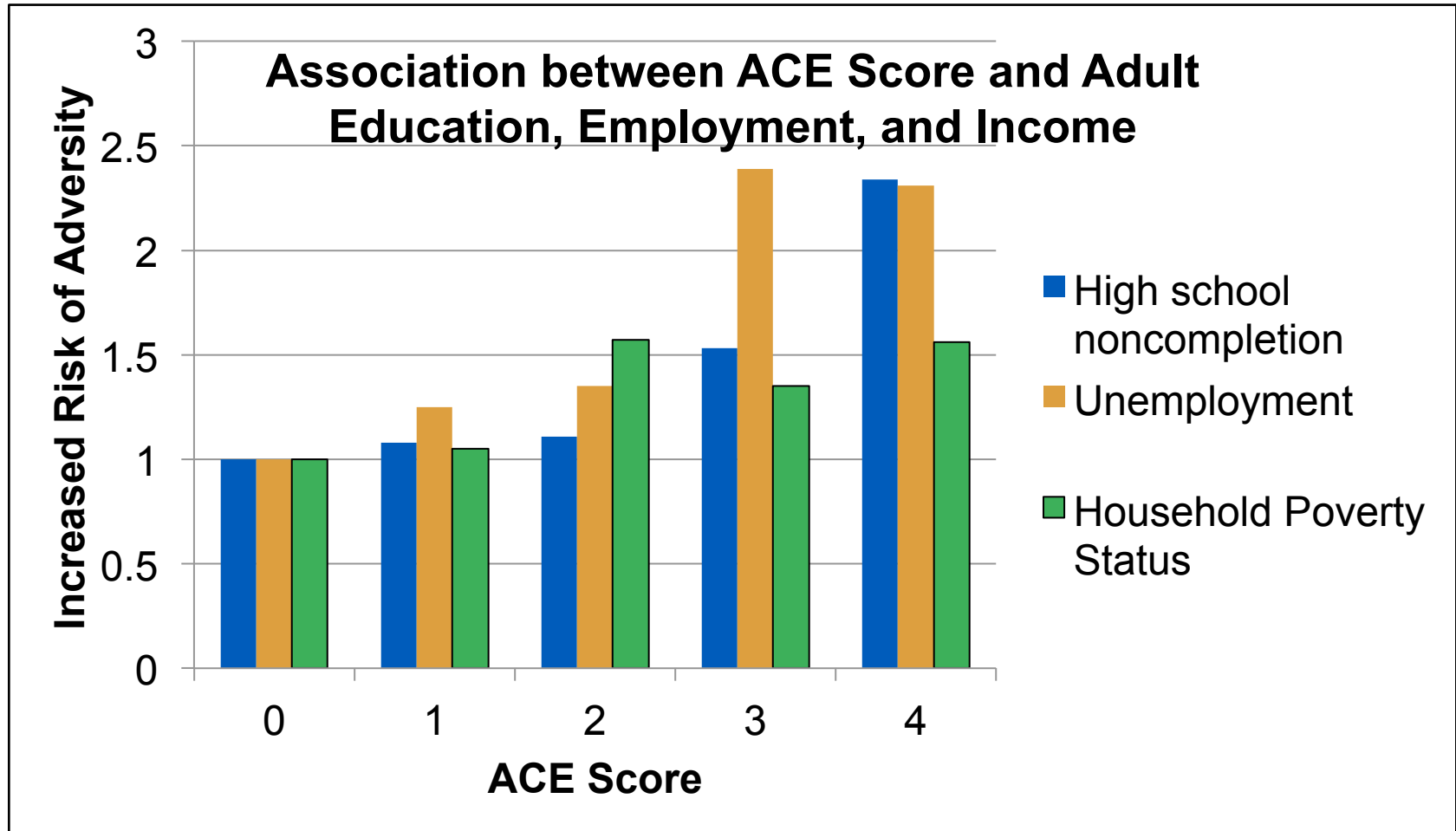
M. Dong et al. / Child Abuse & Neglect 28 (2004) 771–784

Table 1

Prevalence of each category of adverse childhood experience and reporting of additional ACEs

ACE category	N	Prevalence (%)	Additional ACEs (%)						
			0	≥1	≥2	≥3	≥4	≥5	≥6
Abuse									
Emotional	878	10.2	2	98	90	77	62	42	25
Physical	2,275	26.4	17	83	64	46	32	20	12
Sexual	1,812	21.0	22	78	58	42	29	19	12
Neglect									
Emotional	1,274	14.8	7	93	79	63	47	32	19
Physical	855	9.9	11	89	75	61	50	37	24
Household dysfunction									
Parental separation or divorce	1,125	13.0	18	82	61	43	30	19	12
Household substance abuse	2,435	28.2	19	81	60	41	29	18	11
Household mental illness	1,749	20.3	16	84	65	48	34	21	13
Domestic violence	2,081	24.1	5	95	82	64	48	32	20
Crime	516	6.0	10	90	74	56	43	30	23
Median			13.5	86.5	69.5	52.0	38.5	25.0	16.0
Range			2–22	78–98	58–90	41–77	29–62	18–42	11–25

Early Adversity Impacts Life Opportunities



How Does Adversity Impact the Lives of Children, Teens, and Young Adults?

Birth to Childhood

- Fetal Death
- Developmental delay
- Behavioral, emotional, and social problems
- ADHD
- Cognitive impairment

Teens to Young Adults

- Mental health
- Substance use disorders
- Poor academic achievement and school failure
- Involvement with the juvenile justice

Ford et al 2007; Ford et al 2010; Saunders et al 2005; Tuell, 2008, Abram et al 2013

Jimenez et. al 2016 and 2017

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Expanded ACEs to Measure Community-Based Childhood Stressors

- National Scientific Council on the Developing Child expanded definition of adversity
- Included community and systemic causes such as:
 - Witnessed Violence
 - Unsafe neighborhoods
 - Chronic and severe poverty
 - Racial discrimination
 - Bullying
 - Living in foster care

Intergenerational Effects of ACEs on Offspring

- Exposures to substances
- Impaired parenting and harsh parenting style
- Dysfunctional parent-child interactions
- Emotional problems in childhood
- Poor health status in childhood
- Fetal death
- Epigenetic gene modifications

Intergenerational Associations of Parent Adverse Childhood Experiences and Child Health Outcomes

- Offspring of parents with past ACE exposure
 - 85% of parents had $1 \geq \text{ACE}$, 18% $6 \geq \text{ACE}$
- Offspring had statistically significantly higher odds
 - Poor health status (OR = 1.19; 95% CI 1.07–1.32)
 - Asthma (OR = 1.17; 95% CI: 1.05–1.30)
 - Obesity
 - Excessive TV watching (OR = 1.16; 95% CI: 1.05–1.28)

ACEs and Association to Teen Pregnancy, Fetal Death, and Long-term Psychosocial Consequences

- Dose-graded relationship with ACE score and teen pregnancy
- Negative long-term psychosocial consequences and risk of fetal death related more to ACE score than teen pregnancy
- Teen pregnancy alone was not associated to fetal death
- ACE score was associated with increased fetal death after first pregnancy (odds ratios for 0, 1–2, 3–4, and 5–8 ACEs: 1.0, 1.2, 1.4, and 1.8, respectively)

TABLE 4. Categories of ACEs and Adolescent Pregnancy

Categories of Exposure to ACEs	%*	Adolescent Pregnancy	
		Unadjusted OR (95% CI)	Adjusted OR† (95% CI)
0 (3101)	16.0	1.0 (referent)	1.0 (referent)
1 (2227)	21.2	1.4 (1.2–1.6)	1.4 (1.2–1.6)
2 (1410)	25.6	1.8 (1.5–2.1)	1.8 (1.5–2.1)
3 (945)	29.1	2.2 (1.8–2.5)	2.2 (1.8–2.5)
4 (661)	32.4	2.5 (2.1–3.0)	2.4 (2.0–3.0)
5 (400)	39.5	3.4 (2.7–4.3)	3.2 (2.6–4.1)
6 (212)	42.5	3.9 (2.9–5.2)	3.6 (2.6–4.8)
7–8 (132)	53.0	6.0 (4.1–8.4)	5.6 (3.9–8.2)
<i>P</i> for trend	<.000001		

* Percent of those with the listed number of categories of ACEs who experienced an adolescent pregnancy.

† All ORs are adjusted for race, education, and age at interview.

Maternal Maltreatment in Childhood is Associated with Emotional Problems in Their Children

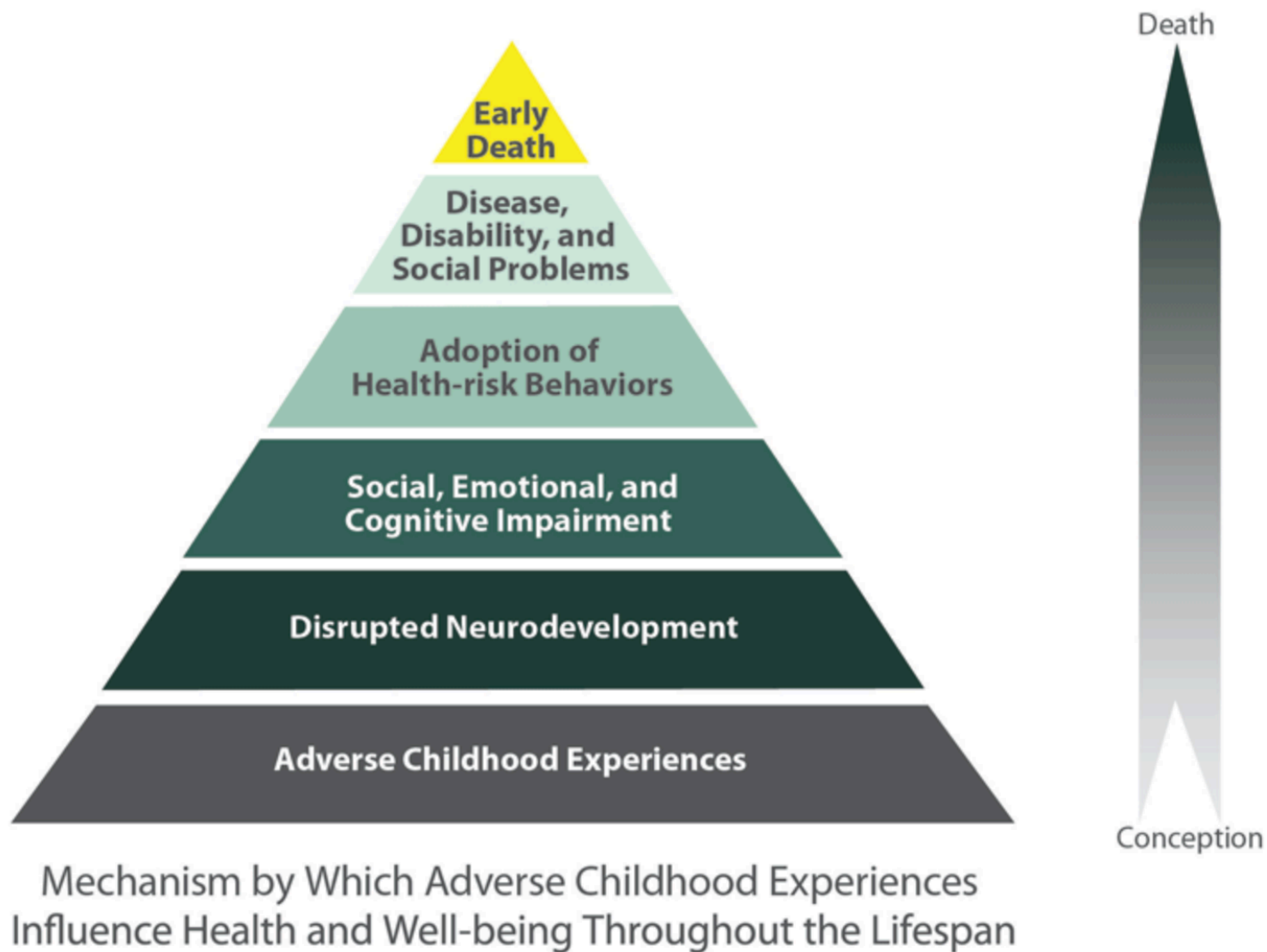
- Impact of ACEs can be intergenerational transmitted
- Severity of maternal abuse experienced in childhood is associated impact on offspring's emotional health (externalizing behaviors)
- Graded dose relationship (Adjusted OR increased with # severity of abuse)
- Multiple social factors mediate this relationship
 - Parenting and discipline style (harsh)
 - Conflict or attachment with child (maternal hostility)
 - Maternal depression
 - Income and education
 - Maternal maladaptive behaviors (substance abuse)
 - Intimate partner violence
 - Child maltreatment
 - Chaotic household

Key Points

1. ACEs are common
2. Dose-graded relationship for 40+ conditions
 - More ACEs experienced → higher risk of medical, psychological, risky health behaviors, and social societal problems as an child and adult
3. ACEs are interrelated and intergenerational

Learning Objectives

- Define adverse childhood experiences (ACEs) and the three categories of adversity
- Recognize the relationship between early adverse childhood experiences and negative health and well-being outcomes from childhood through adulthood
- Recall how early exposure to ACEs and toxic stress can lead to permanent changes in brain structure and function
- Summarize what can be done to help mitigate the effects of ACEs
- Consider screening for ACEs in your practice to assess for future health concerns and behaviors



Content source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention

Stress Responses

Positive

- Brief, Mild to moderate
- Growth promoting
- Part of normal development
- Example: first day of school, immunizations
- Stress **buffered by caring, positive, responsible adult** available to help child cope

Tolerable

- Serious, temporary stress responses
- Greater magnitude of adversity or threat
- Example: Death of family member, serious or life-threatening illness
- Extent of stress activation dependent on **buffering by protective adult relationships**

Toxic

- Strong, frequent, or prolonged activation of the body's stress response systems
- Example: multiple ACEs (abuse, neglect, parental substance abuse)
- **Absence** of supportive adult relationship to buffer stress

Content Sources: Center on the Developing Child Harvard University,
National Council on the Developing Child, Shonkoff and Garner 2012

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Fear and Anxiety Affect the Brain Architecture of Learning and Memory

PREFRONTAL CORTEX

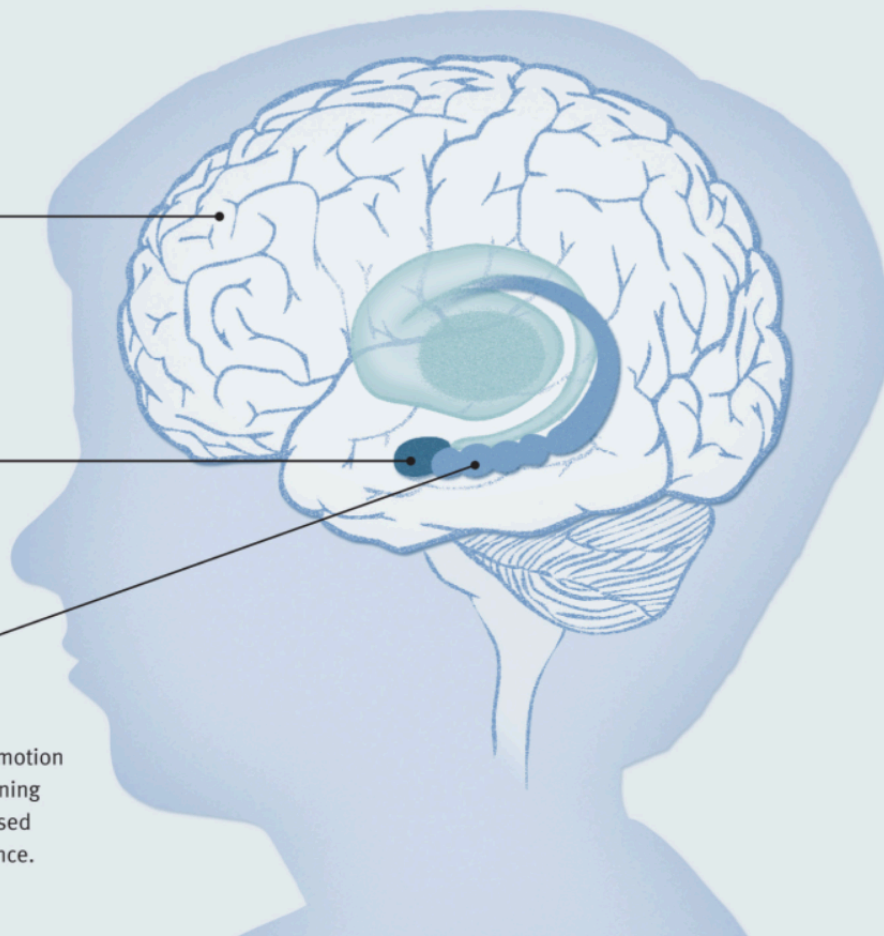
Center of executive functions; regulates thought, emotions, and actions. Especially vulnerable to elevation of brain chemicals caused by stress. Matures later in childhood.

AMYGDALA

Triggers emotional responses; detects whether a stimulus is threatening. Elevated cortisol levels caused by stress can affect activity. Matures in early years of life.

HIPPOCAMPUS

Center of short-term memory; connects emotion of fear to the context in which the threatening event occurs. Elevated cortisol levels caused by stress can affect growth and performance. Matures in early years of life.



For more information, read [Persistent Fear and Anxiety Can Affect Young Children's Learning and Development](#).

Illustration by Betsy Hayes.

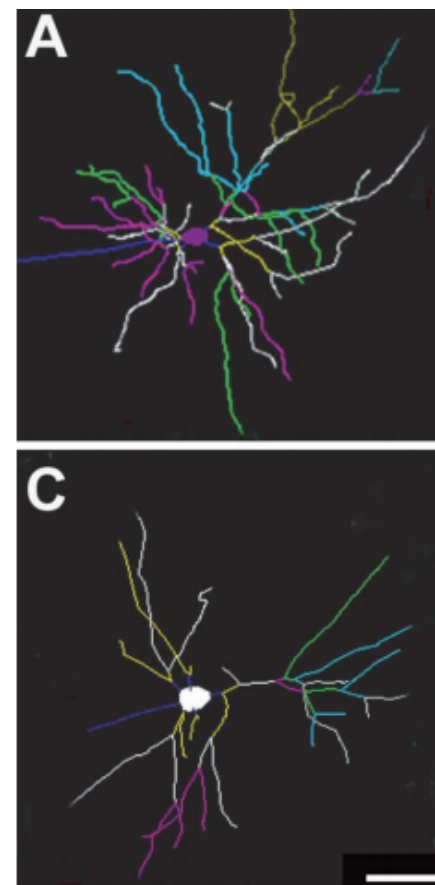
Content source: Center on the Developing Child  HARVARD UNIVERSITY

www.developingchild.harvard.edu

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Persistent Toxic Stress Permanently Changes Brain Architecture

- Plasticity of early brain is sensitive to chemical influences such as stress hormones
- Persistently elevated levels of stress hormones from HPA axis can disrupt architecture
 - Alters size, number of neurons and neuronal connections in medial prefrontal and hippocampus
 - Hypertrophy of amygdala
 - Amygdala activates stress response and HPA axis
 - Creates positive feedback loop
- Leads to “wear-and-tear” on body and brain
- Increased proinflammatory cytokines



Radley et al 2004
Shonkoff and Garner 2012

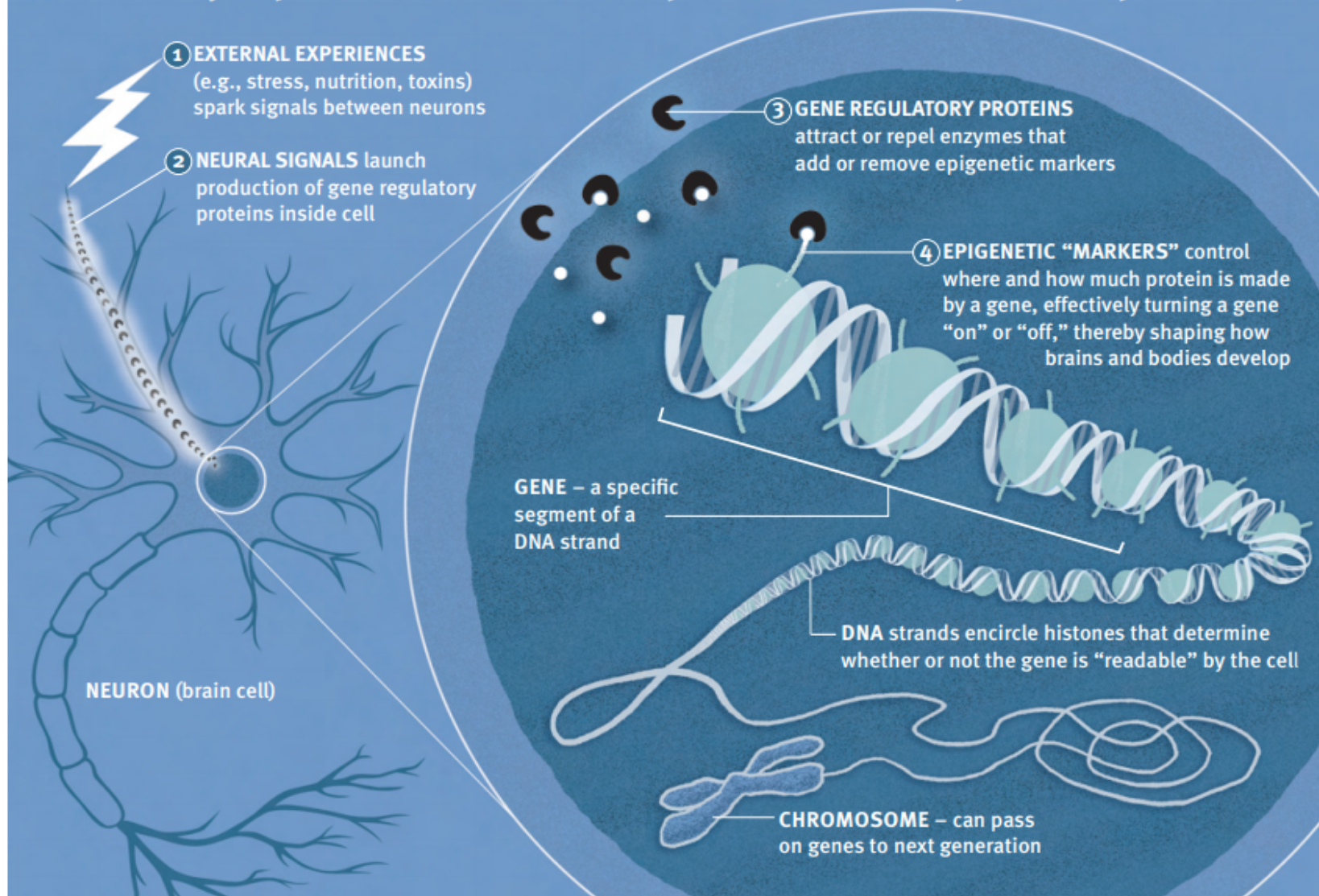
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How do ACEs “Get Under the Skin”?

- Environmental influences can affect ***when*** and ***how*** genes are expressed
- **Epigenetic modifications**
 - Chemical signals written on top of genes that change their function without changing the genetic code
 - Can be *temporary* or *enduring*
 - Usually occur in organs systems, brain is particularly responsive
 - May have lasting affect throughout lifetime and can be passed on to subsequent offspring in both animal models and human studies

How Early Experiences Alter Gene Expression and Shape Development

ILLUSTRATION BY BETSY HAYES



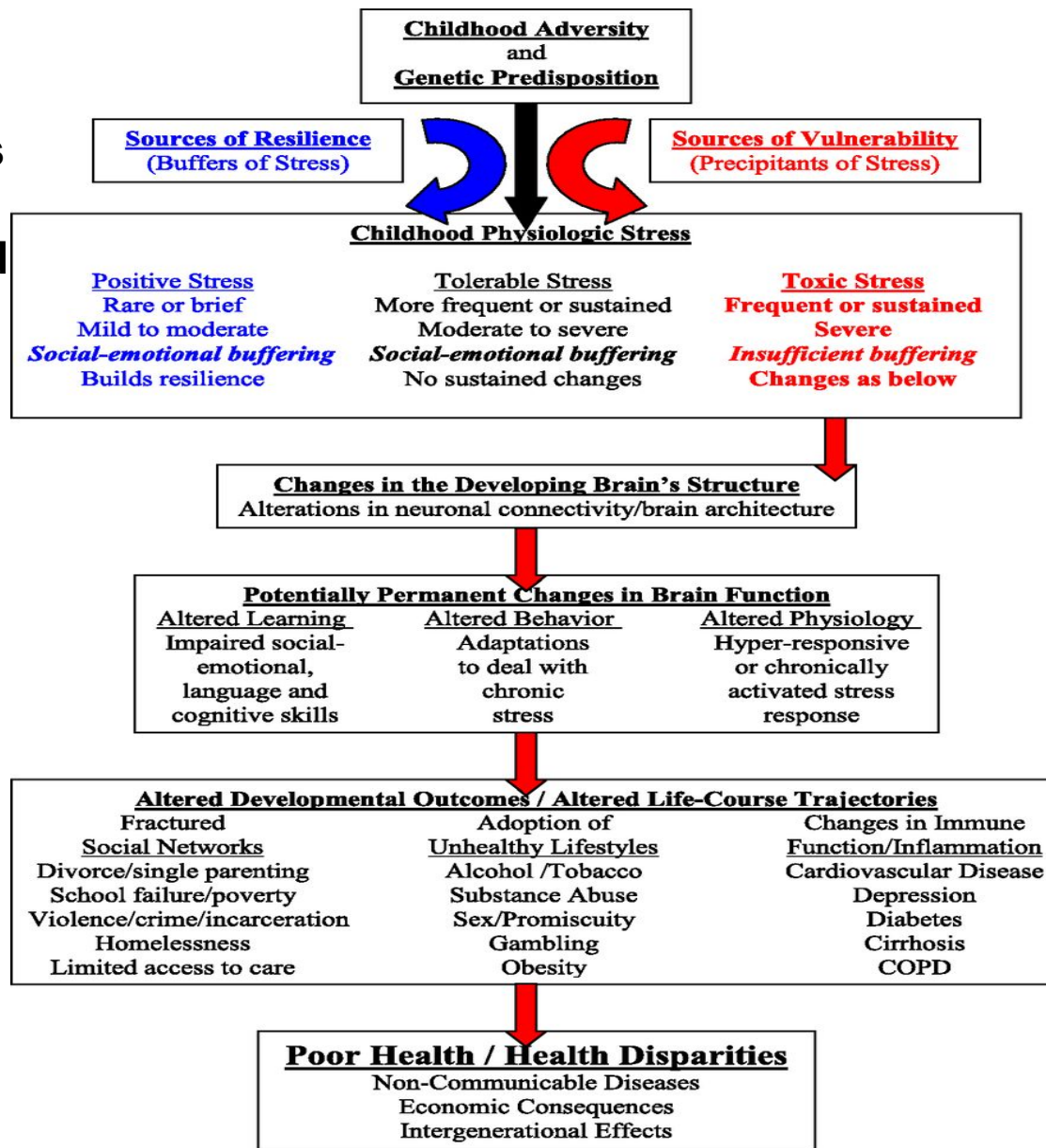
WWW.DEVELOPINGCHILD.NET

Early Experiences Can Alter Gene Expression and Affect Long-Term Development

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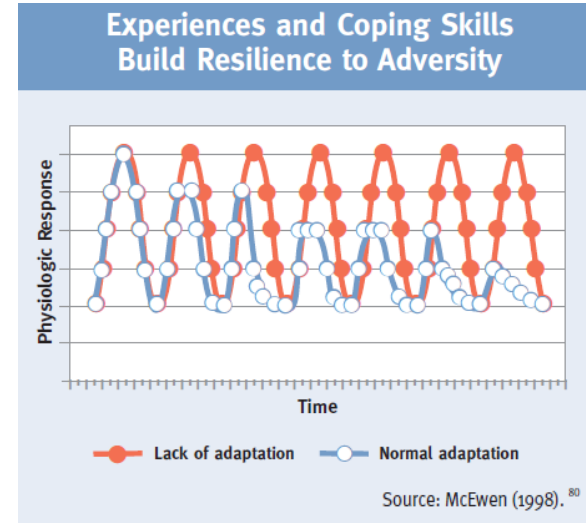
National Scientific Council on the Developing Child (2010) Working Paper No. 10

**Toxic stress in
childhood links
adversity with
poor health and
health
disparities**



Why Some Children Do Well in the Face of Adversity

- They had at **least 1** stable, committed, and supportive relationship with an **adult**
- Supportive relationships, adaptive skill-building, and positive experience lays foundation for **resilience**
- Resilience results from dynamic interactions between
 - Gene expression, immune responsiveness, brain circuitry, and a caregiving environment



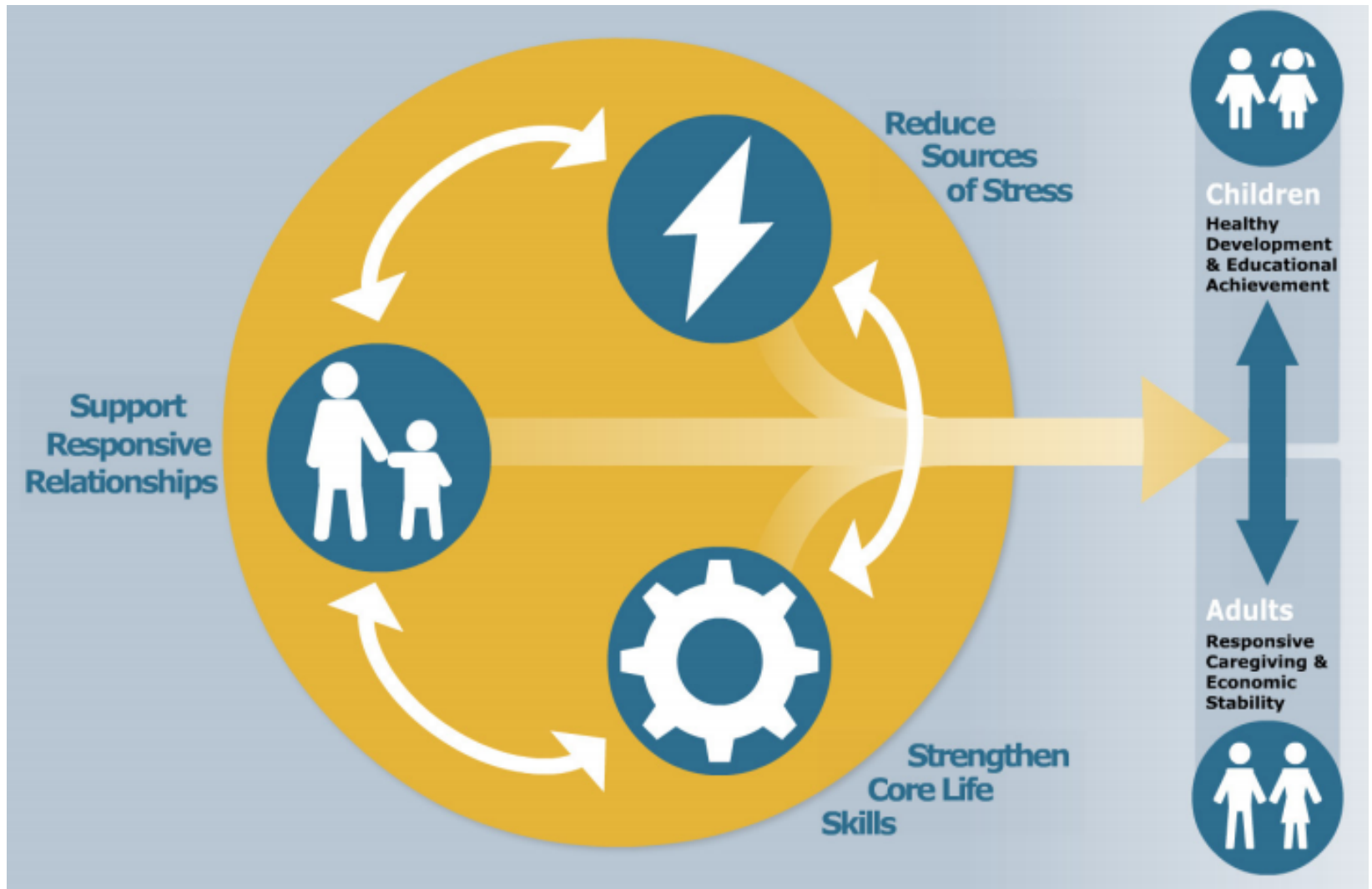
Content Source: National Scientific Council on the Developing Child (2010) Working Paper No. 13

Learning Objectives

- Define adverse childhood experiences (ACEs) and the three categories of adversity
- Recognize the relationship between early adverse childhood experiences and negative health and well-being outcomes from childhood through adulthood
- Recall how early exposure to ACEs and toxic stress can lead to permanent changes in brain structure and function
- Summarize what can be done to help mitigate the effects of ACEs
- Consider screening for ACEs in your practice to assess for future health concerns and behaviors

What Can Be Done to Help Mitigate Effects of ACEs?

- Therapeutic interventions
- Trauma-informed care, practice, education
- ACEs-based screening and referral
- Prevention and risk reduction by focusing on 3 principals:
 1. Reducing sources of stress
 2. Support and build responsive relationships
 3. Strengthening core life skills



Content source: Center on the Developing Child  HARVARD UNIVERSITY

www.developingchild.harvard.edu

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What *can* Be Done About ACEs?

These wide-ranging health and social consequences underscore the importance of preventing ACEs before they happen. **Safe, stable, and nurturing relationships and environments** (SSNREs) can have a positive impact on a broad range of health problems and on the development of skills that will help children reach their full potential. Strategies that address the needs of children and their families include:

Voluntary home visiting programs can help families by strengthening maternal parenting practices, the quality of the child's home environment, and children's development.

Example: Nurse-Family Partnership



Home visiting to pregnant women and families with newborns



Parenting training programs



Intimate partner violence prevention



Social support for parents



Parent support programs for teens and teen pregnancy prevention programs



Mental illness and substance abuse treatment



High quality child care



Sufficient Income support for lower income families

Content source: Centers for Disease Control and Prevention,
National Center for Injury Prevention and Control, Division of Violence Prevention

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4 Main Points of Trauma-Informed Care

1. Realize that trauma has a widespread impact on individuals, families, groups, organizations, and communities
2. Recognize the signs and symptoms of trauma in clients, staff, and others in the system
3. Integrate trauma knowledge into policies, programs, and practices
4. Seek to avoid re-traumatization

Key Points: What can you do

1. Ask your patients and families
2. Provide anticipatory guidance
3. Create awareness and train all staff
4. Build your knowledge and apply trauma informed care
5. Refer to resources (health system and community)
6. Advocate for community resources that support families and reduce stressors

Want to Learn More?

- [Center for the Developing Child](#) - Harvard University
- [The Resilience Project](#) - American Academy of Pediatrics
- [Center for Disease Control and Prevention](#)
- [National Scientific Council on the Developing Child](#)

Summary

- Adverse childhood experiences are common, interrelated, and intergenerationally transmitted.
- There is a persistent grade dose-response relationship between more ACEs experienced and poor outcomes through adulthood
- Toxic stress is the connection between early adversity and poor outcomes later in life
- Toxic stress causes excessive activation of stress response systems in the brain, immune, metabolic regulatory and cardiovascular systems leading to wear and tear on the body
- People who have experienced ACEs are not irreparably damaged
- Children need at least one positive, supportive adult relationship
- There are things that can be done to mitigate the effects of ACEs



Questions & Discussion



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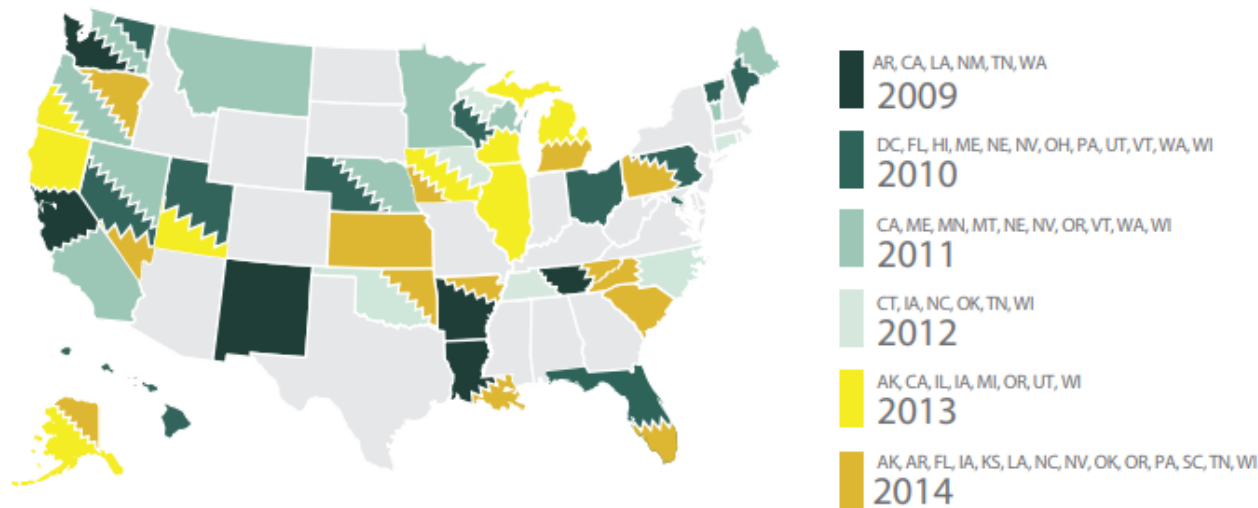
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Behavioral Risk Factor Surveillance System (BRFSS)

- Annual, state-based, telephone survey from 2009-2014
- Collects data from U.S. adults regarding health conditions
- 32 states plus D.C. have included at least 1 ACE question annually

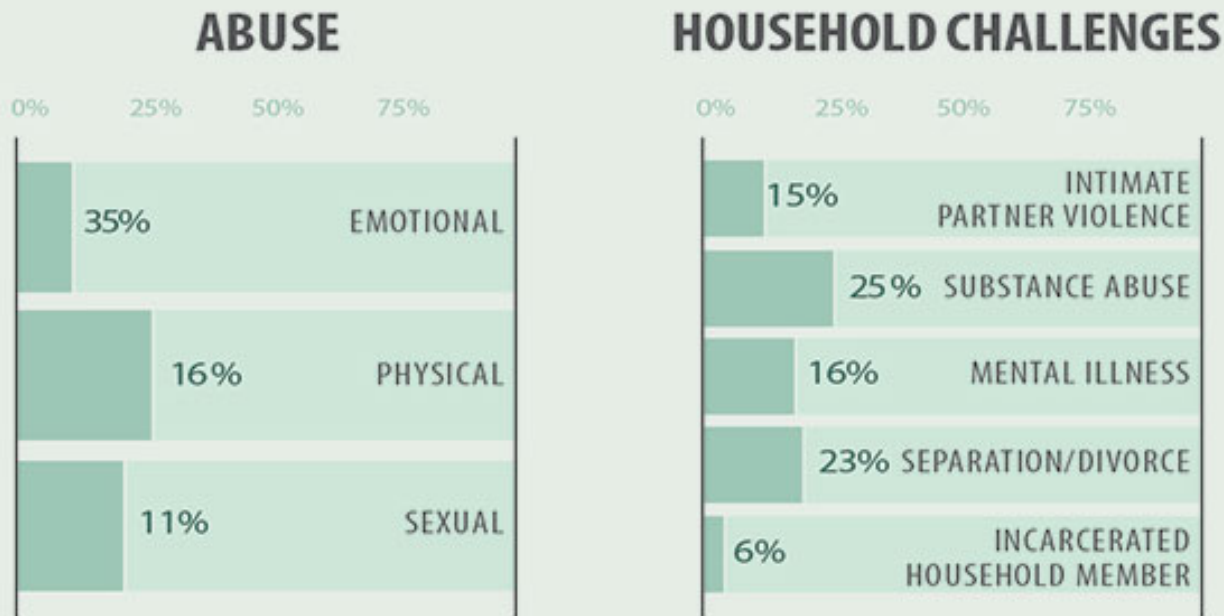


Although the study ended in 1997, some states are collecting information about ACEs in their population through the Behavioral Risk Factor Surveillance System (BRFSS).

Content source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention

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Prevalence of ACEs by Category for Participants Completing the ACE Module on the 2010 BRFSS



Note: Reports and articles that use data from other years and/or other states may contain different estimates.

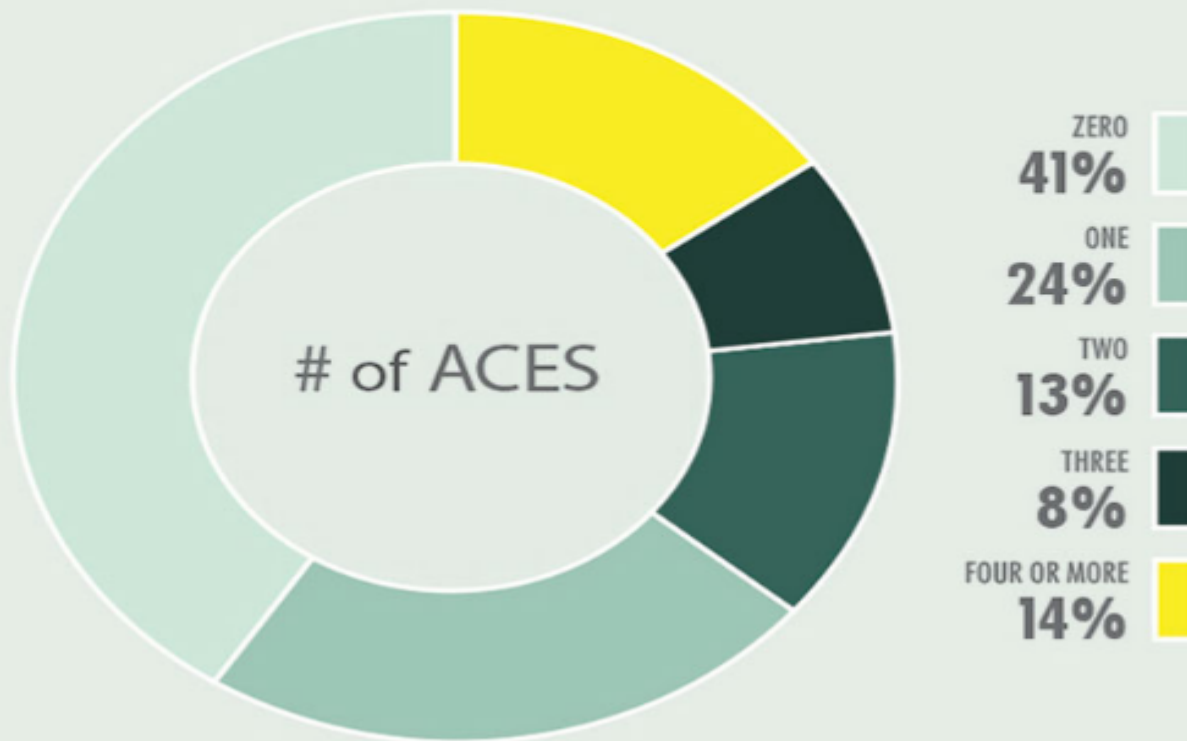
Content source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention

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How Common are ACEs?

ACE Score Prevalence for Participants
Completing the ACE Module on the 2010 BRFSS

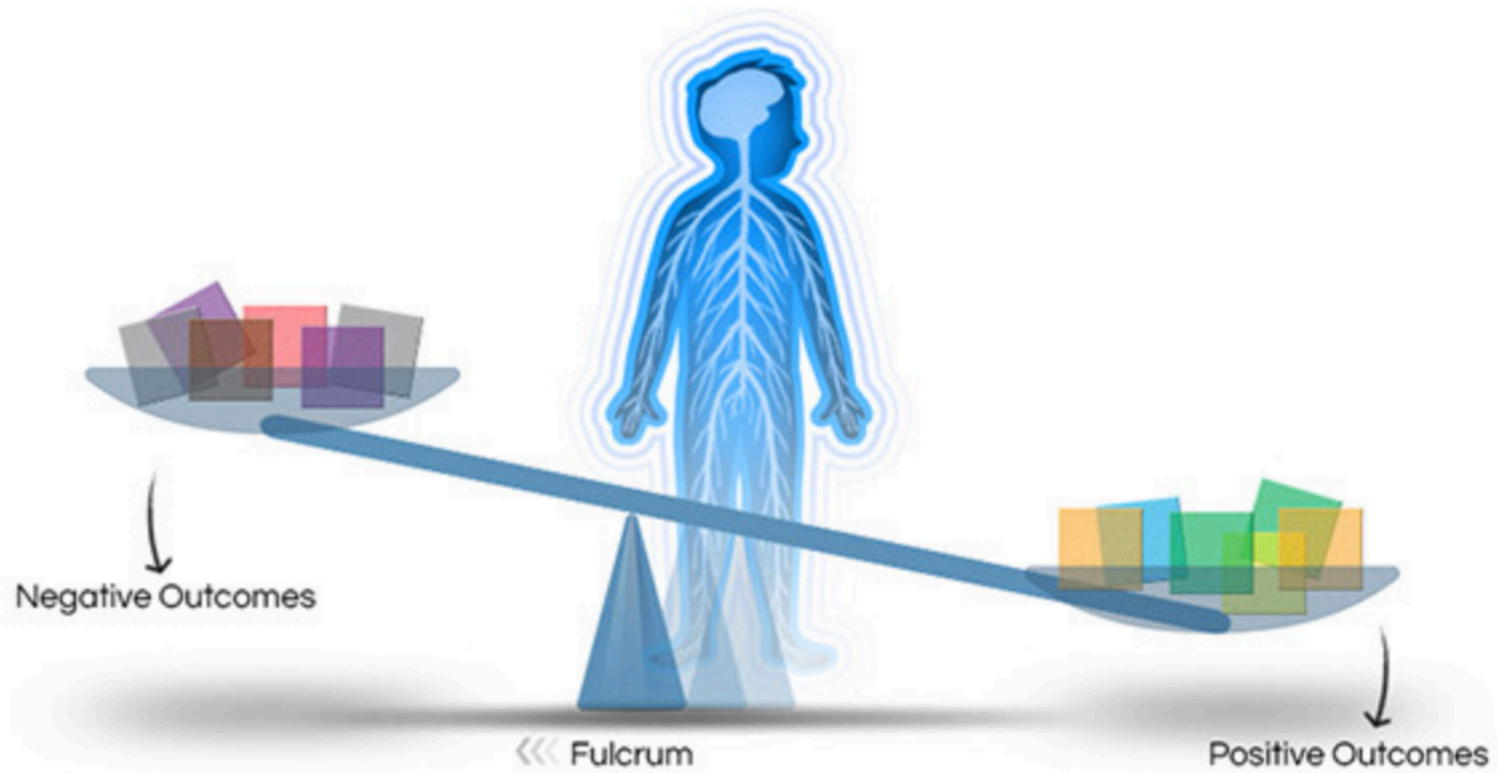
BRFSS



Note: Reports and articles that use data from other years and/or other states may contain different estimates.

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What do we need break the trauma cycle?

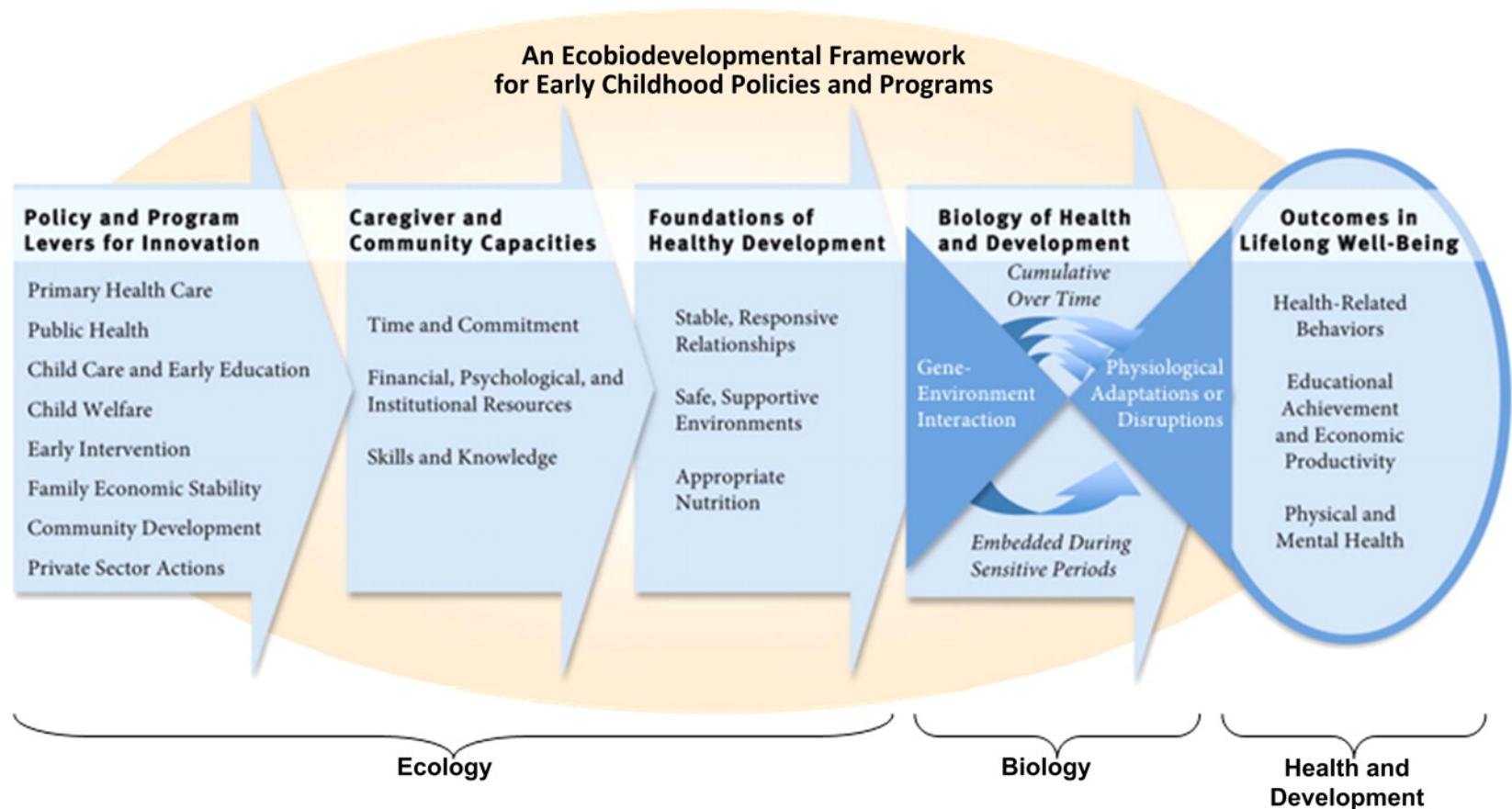


Content source: Center on the Developing Child  HARVARD UNIVERSITY

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An ecobiodevelopmental framework for early childhood policies and programs



Opportunities for minimizing the lifelong effects of early childhood adversity.

