



**GOVERNOR'S CONFERENCE  
FOR THE PREVENTION OF CHILD ABUSE & NEGLECT  
LEGAL INSTITUTE**

**The Impact of Child Trauma on System-Involved  
Children and Youth in Kansas**

**Part I**

**Adverse Childhood Experiences (ACEs):  
The Biology of Child Trauma**

**Overview: Adverse Childhood  
Experiences (ACEs)**

- The 1995-97 CDC-Kaiser Permanente study
  - What are ACEs?
  - What is their impact?
- Later studies repeat the findings
- ACEs in Kansas
- Most important take-away: kids don't "just get over it"

## The CDC-Kaiser ACEs study

- What are Adverse Childhood Experiences (ACEs)? The study named 3 groups:
  - Abuse: emotional, physical, sexual
  - Neglect: emotional, physical
  - Household challenges: mother treated violently, household substance abuse, household mental illness, parental separation or divorce, incarcerated household member

## The CDC-Kaiser ACEs study

What did the study find?

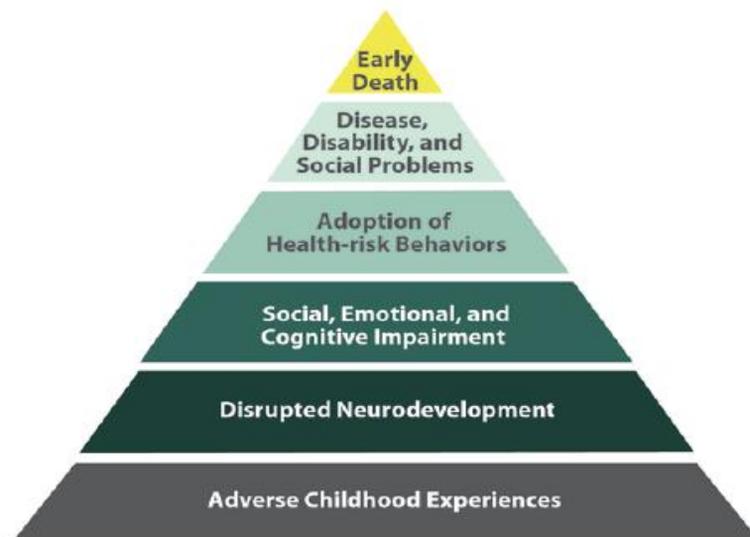
- ACEs are prevalent
  - Almost 2/3 experienced at least one ACE
  - 20%+ experienced three or more
  - 12.5% experienced four or more
- ACEs → short- and long-term negative effects
  - Examples: alcoholism; asthma; depression; drug use; smoking; suicide; premature death

# The CDC-Kaiser ACEs study

Why was the study important?

## LIFETIME IMPACT

- Leading causes of mortality/morbidity are related to health behaviors/lifestyle factors
- ACEs contribute to their development
- Kids don't "just get over it"; ACEs can have lifetime impact if not appropriately treated



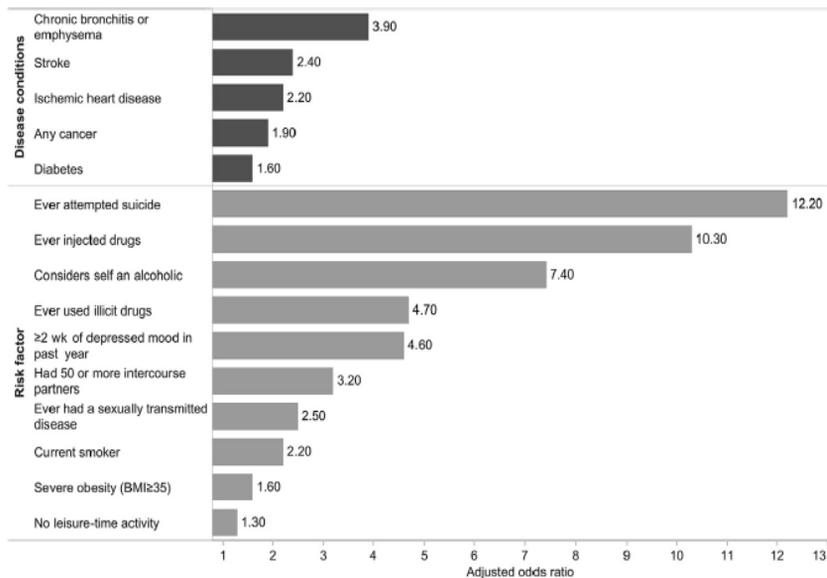
Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

## Later ACEs research: more ACEs ID'd

- Later studies added other ACEs, including:
  - Exposure to community violence
  - Bullying
  - Homelessness
  - Parental stress
  - Economic hardship
  - Discrimination
- Research has linked each to negative long-term health impacts

## Later ACEs research confirms results

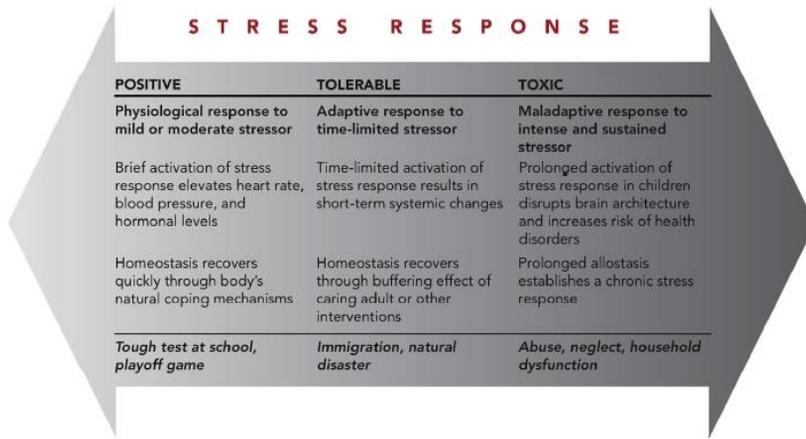
- Reporting 4 or more ACEs is associated with significant increase in chances of developing 6 of the 10 leading causes of death in U.S.:
  - Ischemic heart disease, cancer, stroke, chronic bronchitis or emphysema, diabetes, suicide
- ACEs also associated with childhood disease including upper respiratory infections, ear infections, viral infections



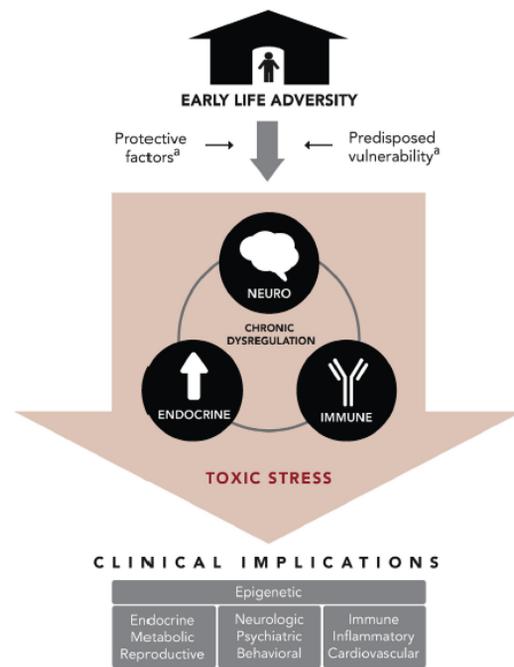
**Fig. 1.** Odds of outcomes among individuals experiencing 4 or more ACEs. ACEs, adverse childhood experiences; BMI, body mass index. Adjusted for age, gender, race and educational attainment. Referent group 0 ACEs. Data from [9]

## But: Not all stress is toxic

- The spectrum runs from positive to tolerable and then toxic stress
- Presence of a buffer helps mediate
- But toxic stress response, if chronic, doesn't return to homeostasis—stays activated
  - Chronic activation → permanent physiologic changes



**Fig. 2.** Spectrum of the stress response: positive, tolerable, and toxic.



**Fig. 4.** Overview of toxic stress. <sup>a</sup>Social, biological, genetic factors.

# ACEs in Kansas

- The Behavioral Risk Factor Surveillance System
  - Developed by CDC in 1984, BRFSS collects data across 50 states by telephone survey
  - ACEs were added in 2008
  - For the first time, the 2014 Kansas BRFSS included the ACEs module
  - Results were published in March:

Appendix A. Prevalence of No (0), Low (1-2), and High (3+) ACE among Kansas adults aged 18 years and older by demographic characteristics, KS BRFSS 2014

	0 (No ACE)			1-2 (Low ACE)			3+ (High ACE)		
	N	Percent	95% CI	N	Percent	95% CI	N	Percent	95% CI
<b>Overall</b>	5,504	45.5%	44.3% to 46.6%	3,695	33.6%	32.5% to 34.7%	2,004	21.0%	20.0% to 21.9%
<b>Gender</b>									
<b>Women</b>	3,153	43.8%	42.3% to 45.3%	2,064	32.6%	31.1% to 34.0%	1,299	<b>23.6%</b>	22.3% to 25.0%
<b>Men</b>	2,411	47.1%	45.4% to 48.8%	1,631	34.6%	33.0% to 36.3%	705	<b>18.2%</b>	16.9% to 19.6%
<b>Age Group</b>									
18-24 years	257	38.2%	34.1% to 42.4%	254	37.9%	33.8% to 42.1%	167	23.8%	20.4% to 27.3%
25-34 years	435	39.4%	36.2% to 42.6%	378	33.6%	30.8% to 36.7%	299	27.0%	24.1% to 29.9%
35-44 years	535	40.1%	37.1% to 43.1%	439	33.4%	30.5% to 36.3%	330	26.4%	23.6% to 29.3%
45-54 years	805	43.0%	40.4% to 45.5%	619	34.2%	31.7% to 36.7%	422	22.8%	20.7% to 25.0%
55-64 years	1,218	45.9%	43.7% to 48.0%	887	34.2%	32.1% to 36.3%	503	19.9%	18.2% to 21.7%
65+ years	2,282	61.0%	59.2% to 62.8%	1,100	29.7%	28.0% to 31.3%	366	9.3%	8.3% to 10.4%
<b>Race/Ethnicity</b>									
<b>NH White</b>	5,014	47.5%	46.3% to 48.7%	3,143	32.8%	31.7% to 34.0%	1,700	<b>19.8%</b>	18.6% to 20.8%
NH Black	124	28.6%	23.3% to 34.0%	163	46.5%	40.4% to 52.6%	87	24.9%	19.6% to 30.2%
<b>NH Other/Multi</b>	145	37.0%	31.1% to 42.9%	138	32.3%	26.4% to 38.3%	139	<b>30.7%</b>	25.4% to 36.0%
Hispanic	229	39.0%	34.4% to 43.5%	220	34.5%	30.2% to 38.8%	155	26.5%	22.4% to 30.6%
<b>Annual Household Income</b>									
<b>Less than \$15,000</b>	254	31.8%	27.5% to 35.7%	267	33.3%	29.2% to 37.4%	270	<b>35.1%</b>	30.9% to 39.2%
\$15,000 to \$24,999	668	37.4%	34.3% to 40.4%	487	33.5%	30.5% to 36.6%	368	29.1%	26.0% to 32.2%
\$25,000 to \$34,999	580	43.5%	40.1% to 47.0%	386	35.0%	31.6% to 38.3%	206	21.5%	18.5% to 24.5%
\$35,000 to \$49,999	818	49.5%	46.6% to 52.5%	535	32.6%	29.8% to 35.4%	257	17.8%	15.5% to 20.1%
<b>\$50,000 or more</b>	2,391	48.5%	46.8% to 50.2%	1,550	33.8%	32.1% to 35.5%	778	<b>17.7%</b>	16.4% to 19.0%
<b>Education Level</b>									
<b>Less than H.S.</b>	252	38.6%	34.0% to 43.1%	186	31.4%	26.9% to 35.9%	170	<b>30.0%</b>	26.6% to 34.5%
H.S. grad or G.E.D.	1,505	45.4%	43.3% to 47.5%	1,019	33.6%	31.6% to 35.7%	577	20.9%	19.1% to 22.7%
Some college	1,521	42.3%	40.3% to 44.3%	1,110	34.8%	32.8% to 36.8%	711	22.9%	21.2% to 24.6%
<b>College Graduate</b>	2,279	51.8%	50.1% to 53.6%	1,376	32.8%	31.1% to 34.5%	634	<b>15.4%</b>	14.1% to 16.7%

**Appendix B. Prevalence of selected health risk factors, perceived poor health and chronic conditions among Kansas adults aged 18 years and older by ACE score category, KS BRFSS 2014**

	0 (No ACE)			1-2 (Low ACE)			3+ (High ACE)		
	N	Percent	95% CI	N	Percent	95% CI	N	Percent	95% CI
<b>Health risk factors</b>									
Current smoking	555	11.5%	10.4% to 12.6%	548	16.3%	14.8% to 17.8%	551	30.2%	27.7% to 32.7%
Binge drinking	538	13.8%	12.6% to 15.1%	468	16.9%	15.3% to 18.5%	309	19.1%	16.9% to 21.3%
Heavy drinking	212	4.5%	3.7% to 5.2%	184	5.3%	4.3% to 6.2%	122	6.2%	4.9% to 7.4%
Obesity	1,563	28.6%	27.2% to 30.1%	1,187	32.6%	30.7% to 34.4%	773	36.1%	33.6% to 38.6%
<b>Perceived poor health</b>									
Poor/fair general health	692	11.4%	10.5% to 12.4%	593	14.5%	13.1% to 15.9%	498	22.5%	20.4% to 24.6%
14+ days poor physical health	472	7.3%	6.6% to 8.1%	391	9.2%	8.1% to 10.2%	375	16.1%	14.3% to 17.9%
14+ days of poor mental health	230	4.0%	3.4% to 4.6%	281	7.8%	6.7% to 8.9%	388	20.2%	18.0% to 22.4%
<b>Chronic conditions</b>									
Arthritis	1,778	24.3%	23.0% to 25.5%	1,261	25.4%	23.8% to 26.9%	793	30.6%	28.3% to 32.9%
Asthma (current)	358	6.3%	5.5% to 7.0%	317	8.7%	7.8% to 9.8%	292	13.5%	11.8% to 15.3%
Cancer	576	7.5%	6.8% to 8.2%	352	6.6%	5.8% to 7.4%	185	6.4%	5.3% to 7.5%
Coronary Heart Disease	331	4.6%	4.0% to 5.2%	206	4.0%	3.4% to 4.7%	131	4.4%	3.5% to 5.2%
COPD	306	4.6%	4.0% to 5.2%	297	6.2%	5.3% to 7.0%	258	9.9%	8.5% to 11.3%
Depression	563	9.2%	8.3% to 10.1%	743	18.5%	16.9% to 20.0%	817	37.6%	35.1% to 40.1%
Diabetes	697	10.1%	9.3% to 10.9%	508	11.1%	10.0% to 12.3%	287	10.6%	9.2% to 12.1%
Heart attack	306	4.5%	3.9% to 5.0%	181	3.8%	3.2% to 4.5%	127	4.4%	3.5% to 5.2%
Kidney Disease	154	2.2%	1.8% to 2.6%	132	2.6%	2.1% to 3.1%	77	3.1%	2.3% to 3.9%
Stroke	185	2.7%	2.3% to 3.2%	150	3.3%	2.6% to 3.9%	118	3.8%	3.0% to 4.6%

## ACEs in Kansas: what's happening?

- A broad coalition has been built to support the Kansas Power of the Positive Initiative
- Using a public-health approach, the coalition will:
  - Increase public awareness of ACEs
  - Use data to inform decisions
  - Encourage positive social norms in communities
  - Assist policy makers in identifying and aligning policies across systems

## The Kansas Power of the Positive Common Agenda

### Vision

All Kansas children live in safe, stable, nurturing relationships and environments.

### Commitment

To improve the well-being of all Kansans by creating safe, stable, nurturing relationships and environments thereby addressing the consequences of adverse childhood experiences (ACEs) and reducing the number of children exposed to 3+ ACEs to under 10% by 2020.

### Strategies

- Employ a multi-generational approach to mitigate and prevent Adverse Childhood Experiences
- Advance systems connections through multi-sectorial collaboration and build upon mutually reinforcing activities
- Engage communities in collaborative efforts in order to empower local level impact
- Develop a network for information and data sharing

