

Disclosures

- I receive funding from the Oklahoma Department of Mental Health and Substance Abuse for training
- I receive grant funding through an Abramson grant from the American Academy of Child and Adolescent Psychiatry for curriculum development.
- I receive funding from Georgetown University to teach a lecture series.

Objectives

- To understand the 3 variable responses to threat.
- To learn 3 effects of trauma on the brain.
- To know 3 symptoms of trauma at each developmental level for children and adolescents.
- To understand one approach to pediatric trauma for primary care.





ABUSE

NEGLECT

HOUSEHOLD DYSFUNCTION



Physical



Physical



Mental Illness



Incarcerated Relative



Emotional



Emotional



Mother treated violently



Substance Abuse



Sexual



Divorce

WHAT IMPACT DO ACEs HAVE?



Death

WHOLE LIFE PERSPECTIVE

EARLY DEATH

DISEASE, DISABILITY, & SOCIAL PROBLEMS

ADOPTION OF HEALTH-RISK BEHAVIORS

SOCIAL, EMOTIONAL, & COGNITIVE IMPAIRMENT

ADVERSE CHILDHOOD EXPERIENCES

Conception

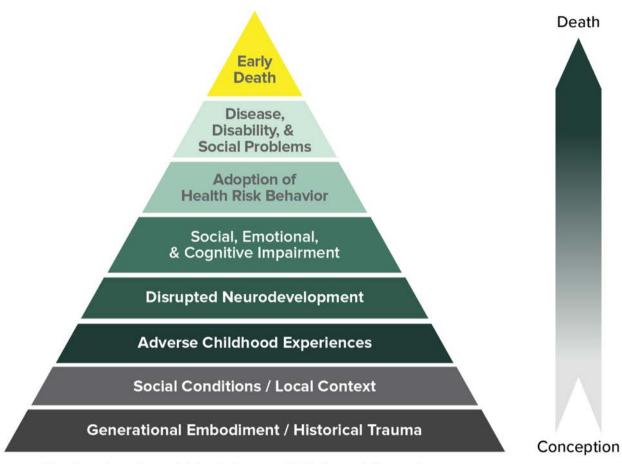
SCIENTIFIC GAP



Other ACE Surveys

- Expanded types of ACEs
 - Racism
 - Witnessing a sibling being abused
 - Witnessing violence outside the home
 - Witnessing a father being abused by a mother
 - Being bullied by a peer or adult
 - Involvement with the foster care system
 - Living in a war zone
 - Living in an unsafe neighborhood
 - Losing a family member to deportation, etc.





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

Moving beyond ACE scores



What is an ACE score?

An ACE score is a tally of specific childhood traumatic events that an individual has experienced.

What do ACE scores tell you?

Higher ACE scores are associated with poor health outcomes at the population level.







Chronic lung disease



Therefore, does NOT predict individual health

Alcohol and drug abuse







Why ACE scores are not effective clinically

Adversity is not destiny. ACE scores predict population outcomes, not individual outcomes.

Does NOT include or measure trauma...



Chronicity

P C



Frequency

 \oplus



Does NOT include asking about **protective factors** in a child's life

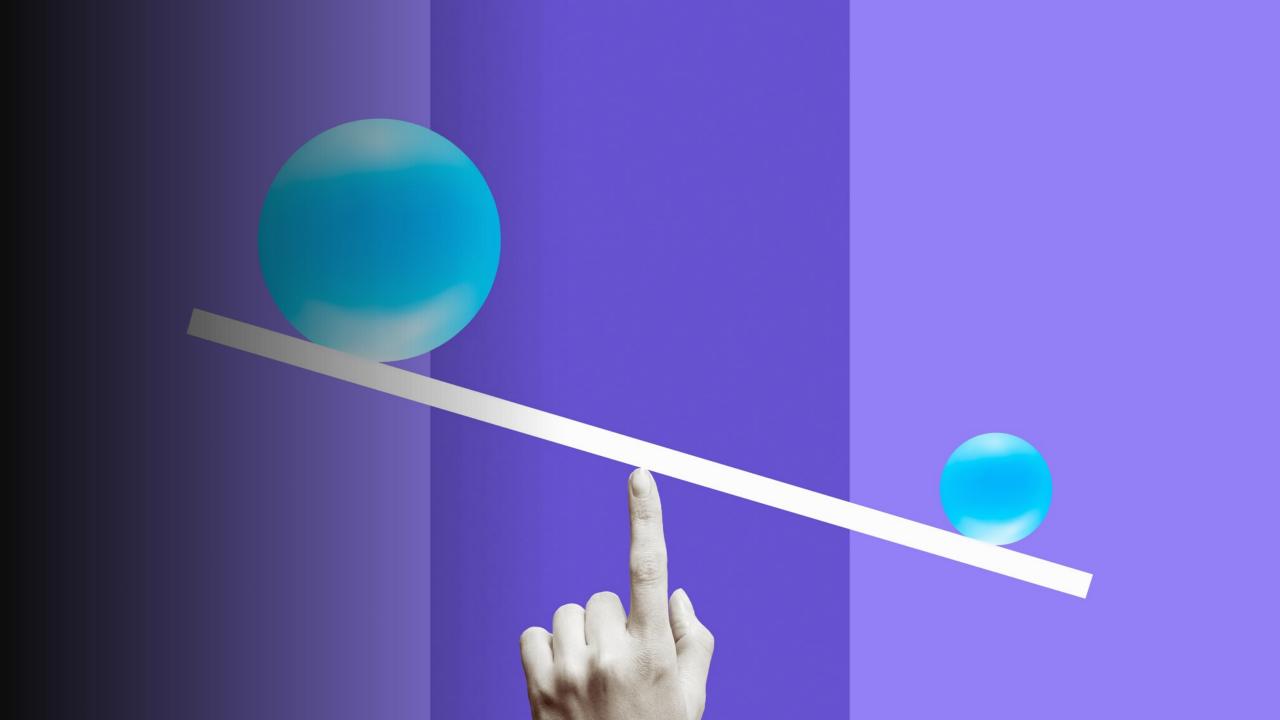














Protective and Compensatory Experiences (PACEs)

Enriching Resources



living in a safe home where needs are met



getting a quality education



having a hobby



being physically active



having rules and routines

Protective and Compensatory Experiences (PACEs)

Supportive Relationships



unconditional love from a caregiver



having a best friend



volunteering in the community



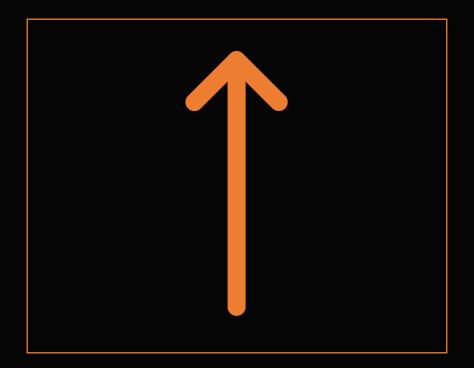
being part of a group

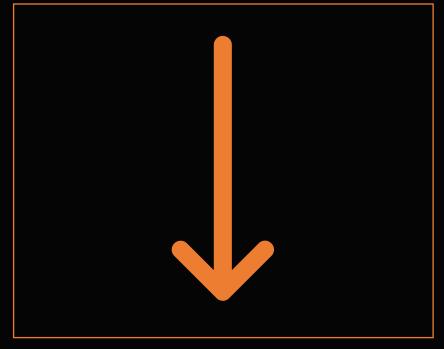


having a mentor

Protective and Compensatory Experiences (PACEs)

- More PACEs decreased report of ACEs
- More PACEs are related to less depression, anxiety, substance use, difficulties in emotion regulation, and life stress.
- PACEs are a protective factor in adulthood.







Link to a pdf of ACEs/PACEs

 https://ou.edu/content/da m/Tulsa/ecei/docs/ACEs%20 and%20PACEs%20questionn aires.pdf

Positive Childhood Experiences

- How much or how often during your childhood did you:
 - feel able to talk to your family about feelings;
 - feel your family stood by you during difficult times;
 - enjoy participating in community traditions;
 - feel a sense of belonging in high school;
 - feel supported by friends;
 - have at least two non-parent adults who took genuine interest in you; and
 - feel safe and protected by an adult in your home.

ACEs

- 20.8%: 0 ACEs
- 40.3%: 1-2 ACEs
- 16%: 3 ACEs
- 22.9%: >/= 4

OK Youth Risk Behavior Survey (2021)

PCEs

- 44.9%: 3 PCEs
- 52%: 1-2 PCEs
- 3.1%: 0 PCEs



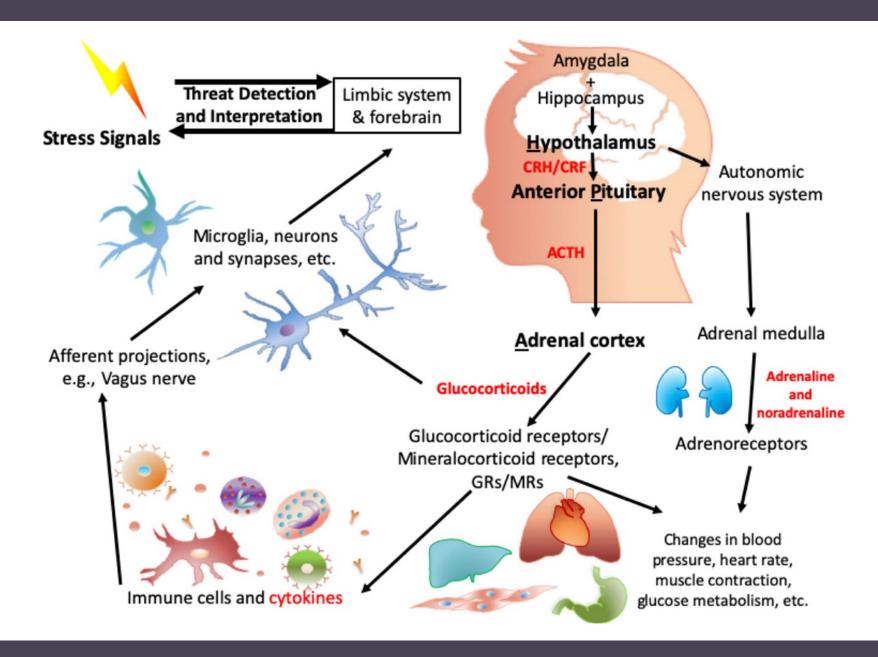
In the United
States, 34.8 million
children (ages 0-17)
are exposed to
adverse childhood
experiences (ACEs)

Giano, et al. (2021)

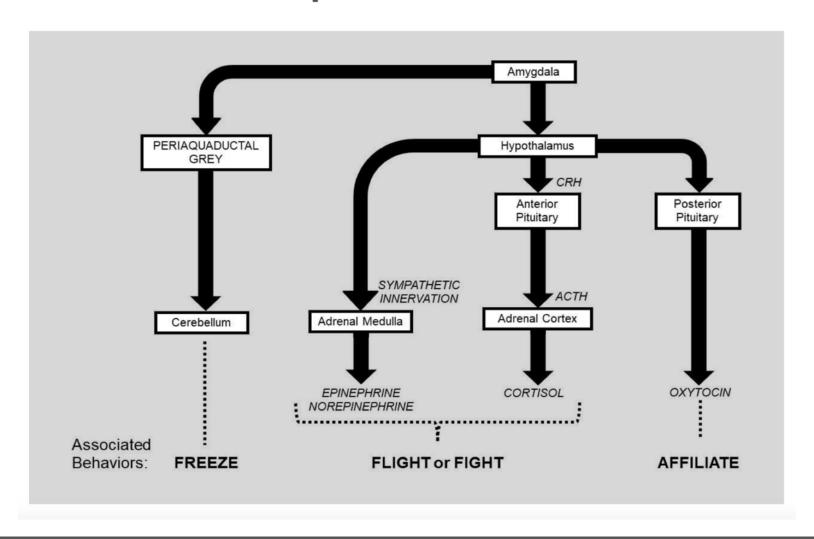
Table 1Comparison of AI/AN ACE Prevalence in the U.S. (34 States), BRFSS 2009—2017

Category/Domain	AI/AN %	White %	Black %	Hispanic %	All races/ ethnicities %
Emotional	43.1	33.4	28.8	33.7	33.4
Physical	27.2	15.8	12.1	23.8	17.5
Sexual	17.6	11.0	11.8	11.2	11.3
Intimate partner violence	28.5	15.5	21	22.5	17.7
Household substance abuse	40.9	26.8	25.4	26.6	26.8
Household mental illness	22.7	17.9	11.1	11.0	16.1
Parental separation/ divorce	41.6	25.3	44.0	28.5	28.2
Family incarceration	17.5	6.3	14.1	9.2	8.0
ACE score mean	2.32	1.53	1.66	1.63	1.56





Variable Responses to Threat



Which age range is trauma, in the form of abuse and neglect, most common?

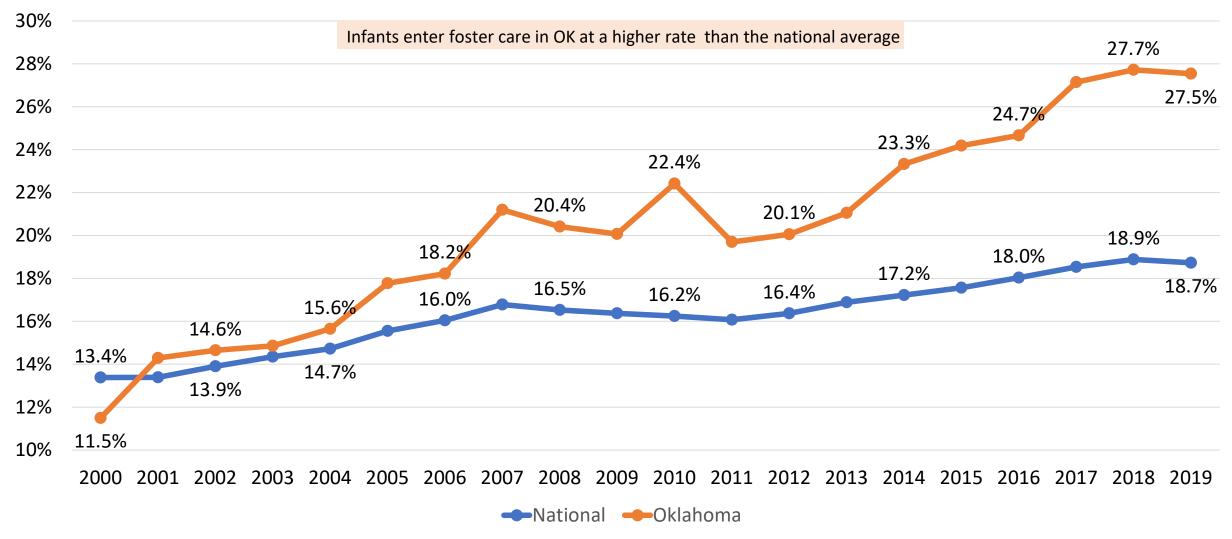
0-3

7-9

11-13

16-18

Percent of Children Under Age 1 who Entered Out of Home Care in the United States and Oklahoma, 2000 to 2019



Note: Estimates based on <u>children who entered out of home care</u> during Fiscal Year

8-12 weeks

- What we see on the outside:
 - More focused
 - Better organized
 - More communicative
 - More efficient learners
 - More enjoyable social partners
 - social smile





Changes in the Brain

- Growth of synapses in the cortex
- Myelination of visual pathways
 - Cause enhanced cognitive capacities
- Reflected in
 - Classical and operant conditioning
 - Habituation
 - Receptive and expressive communication
 - Social smiling
- Remember longer with less exposure





What Do These Changes Mean?

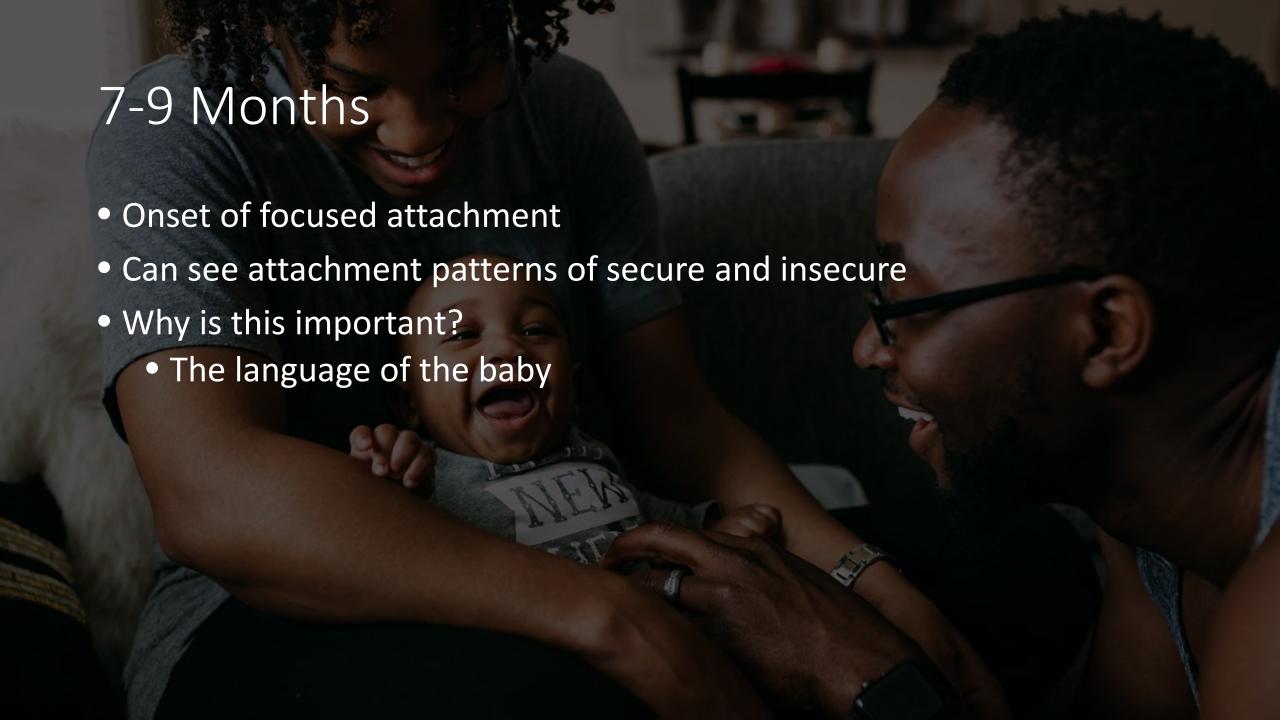
- Babies will anticipate repeated patterns and notice alterations.
 - If negative alterations
 - Disruptive effects on regulatory and interactive behaviors
- Infants are aware of caregiver's behavior, which affect baby's behaviors.

7-9 Months

- Object permanence
 - The ability to retain a mental image of an object
 - Leads to stranger weariness and separation protest
- Increased ability to be mobile leads to an increase in exploration
- Success leads to an emerging sense of self efficacy, the belief or expectation that they will be successful in attaining goals

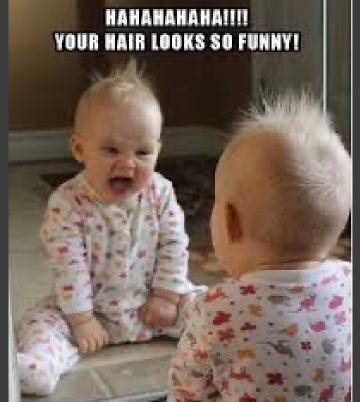






18 to 20 months

- An advance in symbolic representation
- Increase in language competence
 - Toddlers can regulate behaviors in service of social goals
- Working Models of relationships are developed
 - Through interactions with their caregivers
 - Can use patterns of the past to predict the future
 - Lead to an objective sense of self



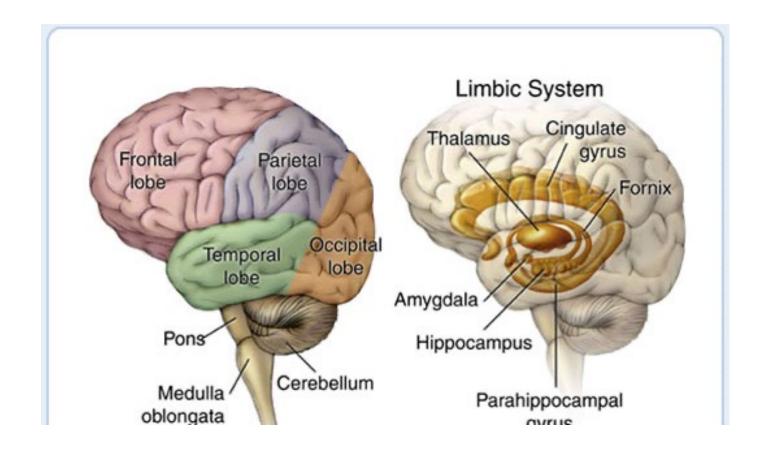


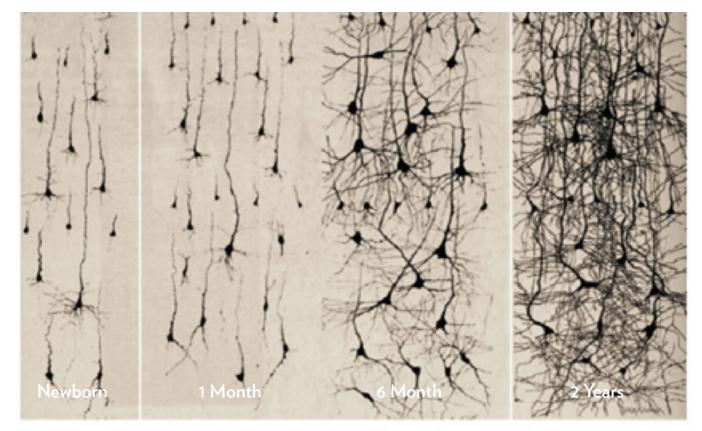




Trauma Affects the Brain

AMYGDALA HIPPOCAMPUS

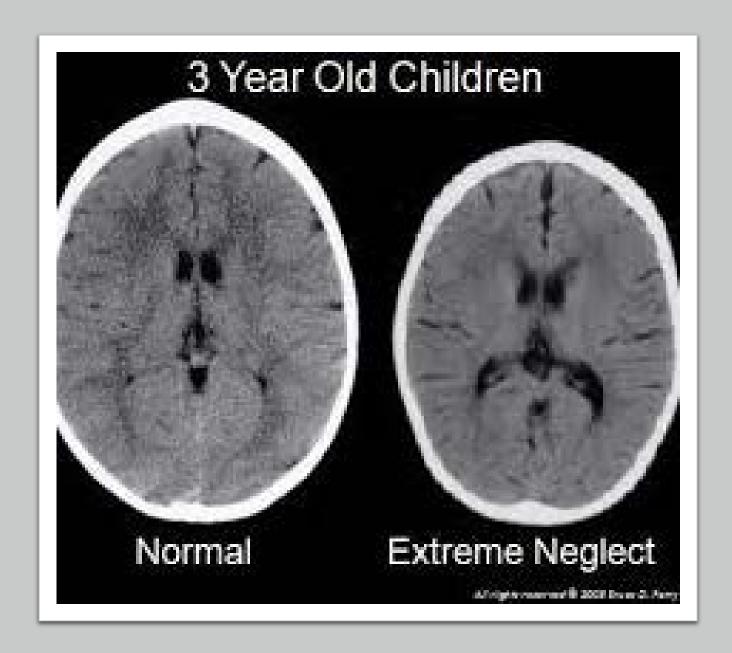




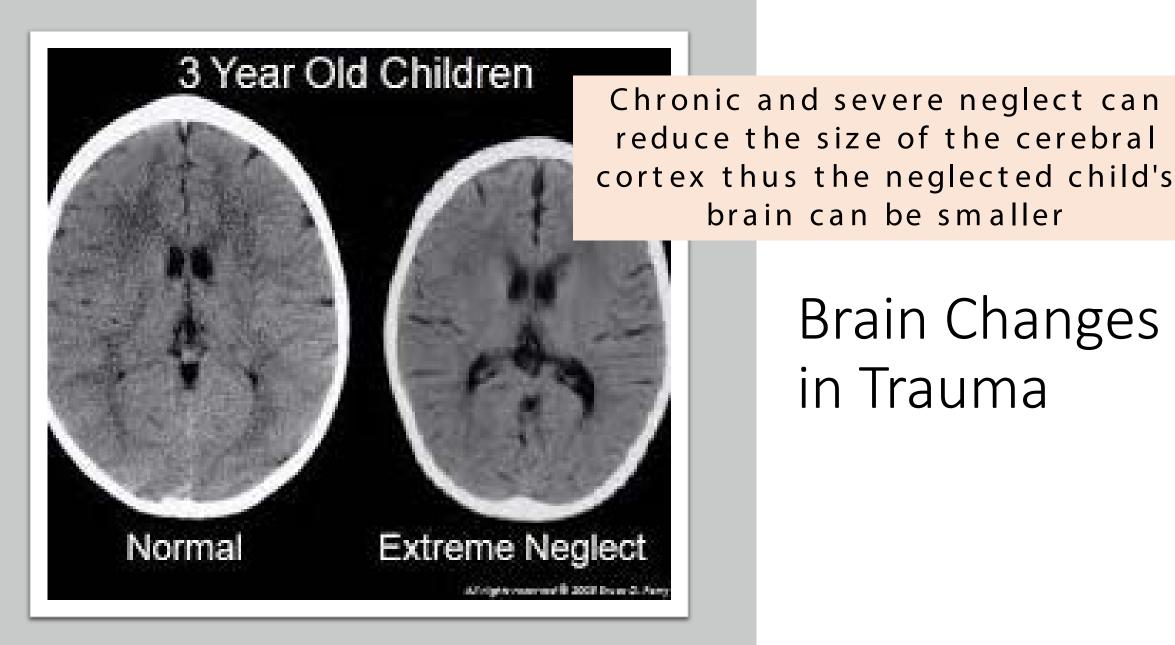
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Neurological Changes

- Prolonged stress
 - Decreased neural connections
 - Decrease in cognitive ability
- Survival part is strengthened not the learning part
 - Less capable of coping



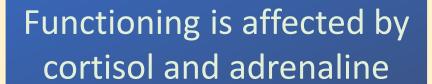
Brain Changes in Trauma



Brain Changes in Trauma

Healthy Front Front An Abused Brain Brain This PICT second This PUT was of the beats of a neethe brain of a lite. madefield above you matches treffice. game of high freed. who was instituand he this and tendinal dorth Markinghetty, M. after hirth, shown kirth sub-prinsthe other of exthe structures such tennur depate divisi in deliner. The tenin the brain stees. benedert ver fully paral folies (topi. which regulate Anctival in its Temporal lobes gions like the tenemittees and reporal lebes traps. early childhood excorns input from the senion, are neatly children suffer perfecces whether electricity. exact kental and our mittee problems. **Back** Back





Prefrontal Cortex

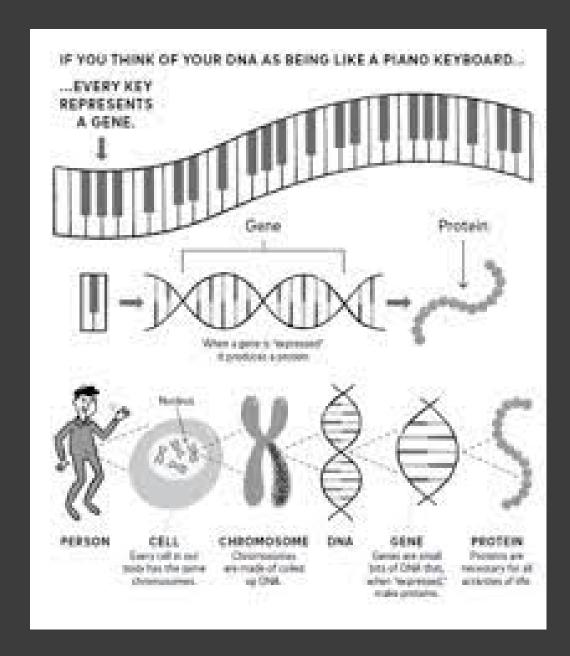
Planning complex cognitive behavior

Personality expression

Decision making

Moderating social behavior

National Scientific Council on the Developing Child. (2005/2014). *Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper 3*. Updated Edition. http://www.developingchild.harvard.edu



Epigenetics

- How the environment and your genes work together
 - What genes are expressed

National Scientific Council on the Developing Child. (2005/2014). *Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper 3*. Updated Edition. http://www.developingchild.harvard.edu & McIntosh, 2019

The Epigenetics of Childhood Trauma

- "If our DNA is like a piano keyboard, the way the keys are played (the way genes are *expressed*) makes you who you are. Some keys are not played at all and others are always played. Some are played softly while others are played harshly. If, how, and when your genes are expressed ultimately makes you the unique individual you are. Think of it as "your song" or "the music of you." Interestingly, your tune can change, and what causes that change is epigenetics.
- Epigenetics is the science of gene expression. Your DNA is written in permanent marker; it can't be changed or erased. Epigenetics is written in pencil: How our genes are expressed can change, thus we change our tune throughout our life. Epigenetics is the interface between nature (the genes you inherited from your parents) and nurture (your life experiences). "



Overview - AAP

Ways trauma can impact the brain and body physiologically:

Amygdala hypertrophy Hippocampus atrophy Prefrontal cortex not accessible
Prefrontal cortex not accessible
 Anterior cingulate cortex and insula blunted Default mode network does not develop normally Risk reward pathways blunted
• Methyl groups or histones attach to promoter regio or come off promotor regions of genes
 Leads to transcription or lack of transcription of genes
mune system • Inflammatory system up-regulated onstant • Humoral immunity diminished ood • Sick syndrome
on

Ages 0-2

- Demonstrate poor verbal skills
- Exhibit memory problems
- Scream or cry excessively
- Listless/Lack of crying
- Have poor appetite, low weight, or digestive problems



Ages 3-6

- Problems focusing or learning in school
- Develop learning disabilities
- Show poor skill development
- Act out in social situations
- Imitate the abusive/traumatic event
- Be verbally abusive
- Be unable to trust others or make friends
- Believe they are to blame for the traumatic event
- Lack self-confidence
- Stomach aches or headaches







School Age – Pre-adolescents

- Fear of separation from caregivers children may not want to sleep alone, for example
- Sudden negative change to worldview, seeing it as dangerous and unsafe
- Loss of trust in caregivers and family
- Replaying trauma, perhaps in artwork or role-play
- Loss of appetite

- Increased aggression and impulsiveness
- Loss of concentration
- Unusual mood changes in particular, being depressed or distressed
- Loss of interest in activities that used to be enjoyed
- Physical complaints headaches and stomach aches in particular

Adolescents

- Repetitive thoughts of the event
- Nightmares
- Flashbacks
- Efforts to avoid anything that reminds your child of the event
- Irritable behavior and angry outbursts
- Exaggerated startle response
- Hyper-vigilance
- Problems concentrating



Adolescents

- Sleep disturbance
- Low self-esteem
- Feelings of shame or guilt
- Feelings of isolation
- Depression
- Emotional numbing
- Poor performance in school
- Difficulty in relationships with peers and family members.
- Reckless, aggressive or self-destructive behavior



Trauma Informed Care -NCTSN

"Medical care in which all parties involved assess, recognize, and respond to the effects of traumatic stress on children, caregivers, and health care providers."

This includes attention to secondary traumatic stress (STS), the emotional strain that results when an individual hears about the first-hand trauma experiences of another.

TIC

In the clinical setting, TIC includes:

- Prevention
- Identification
- Assessment of trauma
- Response to trauma
- Recovery from trauma as a focus of all services



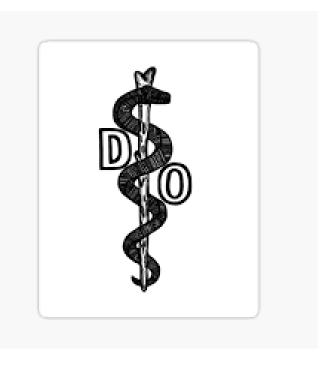
Pediatrics: Trauma-Informed Care

 Pediatric clinicians are on the front lines of caring for children and adolescents and, thus, have the greatest potential for early identification of and response to childhood trauma.

- Challenges to providing TIC:
 - Lack of knowledge,
 - Lack of time time
 - Lack of resources



The Tenets of Osteopathic Medicine



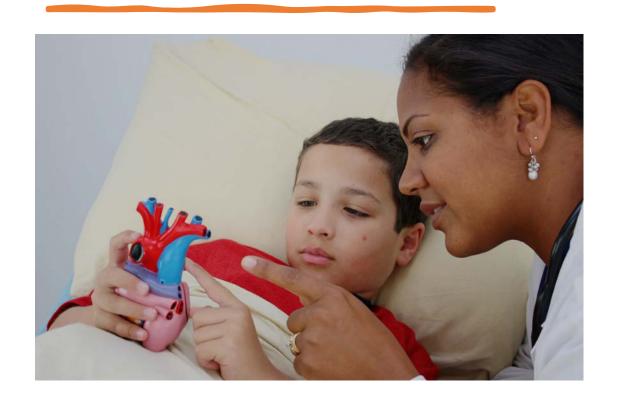
- The body is a unit; the person is a unit of body, mind, and spirit.
- The body is capable of self-regulation, self-healing, and health maintenance.
- Structure and function are reciprocally interrelated.
- Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function.

Provide Trauma-Informed Care

Move away from summing the suffering to building the buffering



Create a Safe Environment











Screening

Pediatric Traumatic Stress Screening Tool

6-10 years of age

Sometimes violent or very scary or upsetting things happen. This could be something that happened to your child or something your child saw. It can include being badly hurt, someone doing something harmful to your child or someone else, or a serious accident or serious illness.

Has	something like this happened to your child recently? \square Yes \square No						
If	'Yes,' what happened?						
Has	something like this happened to your child in the past? Yes No						
If	'Yes,' what happened?						
		FREQU	ENCY	RATINO	CALE	NDARS	
	Select how often your child had the problem below in the past month. Use the calendars on the right to help you decide how often.						
How much of the time during the past month			Little	Some	Much	Most	
1	My child has bad dreams about what happened or other bad dreams.	0	1	2	3	4	
2	My child has trouble going to sleep, waking up often, or has trouble getting back to sleep.	0	1	2	3	4	
3	My child has upsetting thoughts, pictures, or sounds of what happened come to mind when he/she doesn't want them to.	0	1	2	3	4	
4	When something reminds my child of what happened, he/she has strong feelings in his/her body, like his/her heart beats fast, headaches, or stomach aches.	0	1	2	3	4	
5	When something reminds my child of what happened, he/she gets very upset, afraid, or sad.	0	1	2	3	4	
6	My child has trouble concentrating or paying attention.	0	1	2	3	4	
7	My child gets upset easily or gets into arguments or physical fights.	0	1	2	3	4	
8	My child tries to stay away from people, places, or things that remind him/her about what happened.	0	1	2	3	4	
9	My child has trouble feeling happiness or love.	0	1	2	3	4	
10	My child tries not to think about or have feelings about what happened.	0	1	2	3	4	
11	My child has thoughts like "I will never be able to trust other people."	0	1	2	3	4	
12	My child feels alone even when he/she is around other people.	0	1	2	3	4	
13	*Over the last 2 weeks, how often has your child been bothered by thoughts that he/she would be better off dead or hurting him or herself in some way?	Not at all	Seve day	rai tha	lore n half e days	Nearly every day	
*Adapted from Patient Health Questionnaire (PHQ-C)							
Clinicians, please indicate actions taken:							
□ No Action Taken							
	Referrals: (check all that apply) In-office Interventions: (check all that apply)						



Patient Name:

☐ Child Protection (DCFS/CPS)

☐ Crisis Evaluation / Emergency Department

□ Trauma Evidence-Based Treatment

☐ Mental Health Integration (MHI)



□ Sleep Education

□ Belly Breathing

□ Guided Imagery

□ Progressive Muscle Relaxation Patient DOB:

> Based on the UCLA Brief Trauma Screen ©2017 Regents of the University of California. All rights reserved. ©2020 Intermountain Healthcare. All rights reserved.

TABLE 2. Treatment Stratification						
Symptoms	Poor functioning?	Clinical decision				
Severe symptoms: Score ≥ 21**						
Moderate symptoms: Score 11-20**	NO	Resilient Approach Refer to MHI or Community MHI.				
Mild symptoms: Score ≤ 10**	NO	Protective Approach Provide strengths-based guidance and continue monitoring.				

^{**}Scores from *Pediatric Traumatic Stress Screening Tool* (see page 9 for more information)

Office Responses: AAP

Potentially Traumatic Experiences	Trauma symptoms	Office responses
None	None to some	Primary prevention, anticipatory guidance, resilience promotions
Single incident or minor trauma	None to latent or mild	Secondary prevention, anticipatory guidance, resilience promotion, trauma informed guidance, close monitoring, screen for trauma history and symptoms
Major event or cumulative	Mild to moderate	Secondary and tertiary prevention, anticipatory guidance, resilience promotion, psychoeducation, trauma informed guidance, close monitoring, and follow-up; possible referrals to community services, mental health
Major event or cumulative	Moderate to severe	Tertiary prevention, anticipatory guidance, resilience promotion, trauma informed guidance, close monitoring, and follow-up; avoidance of retraumatization, referrals to community services, referrals to evidence-based evidence-informed trauma mental health services

If you checked 'yes' on either question above, please continue below.

Select how often your child had the problem below in the past month. Use the calendars on the right to help you decide how often.

FREQU	ENCI	CATING	CALE	NUAKS
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	and database of the right to help you add not often				,	
Н	ow much of the time during the past month	None	Little	Some	Much	Most
1	My child has bad dreams about what happened or other bad dreams.		Sleep	prol	olem	S
2	My child has trouble going to sleep, waking up often, or has trouble getting back to sleep.	Both				
3	My child has upsetting thoughts, pictures, or sounds of what happened come to mind when he/she doesn't want them to.					
4	When something reminds my child of what happened, he/she has strong feelings in his/her body, like his/her heart beats fast, headaches, or stomach aches.	Hypervigilance and intrusive symptoms				
5	When something reminds my child of what happened, he/she gets very upset, afraid, or sad.					
6	My child has trouble concentrating or paying attention.					
7	My child gets upset easily or gets into arguments or physical fights.					
8	My child tries to stay away from people, places, or things that remind him/her about what happened.					
9	My child has trouble feeling happiness or love.	Avoidance and				ł
10	My child tries not to think about or have feelings about what happened.	negative mood				
11	My child has thoughts like "I will never be able to trust other people."					
12	My child feels alone even when he/she is around other people.					
13	*Over the last 2 weeks, how often has your child been bothered by thoughts that he/she would be better off dead or hurting him or herself in some way?		S	uicid	e	

Your Office Resources...

TABLE 3. Brief in-office interventions (for details see page 23)				
Sleep problems	Sleep educationBelly breathingGuided imageryMedication			
Hypervigilant/intrusive symptoms	 Belly breathing Guided imagery Progressive muscle relaxation Mindfulness 			
Avoidance/negative mood symptoms	 Behavioral activation Return to routine Parent-child communication 			

Physical Symptoms of Trauma

- Physical symptoms of trauma examples
 - functional abdominal pain
 - tension headaches.
- View conditions and concerns from a trauma-informed lens.
- Rule out other medical causes



Your Community Resources







CHANGES TO MEDICAID



PHONE A FRIEND...



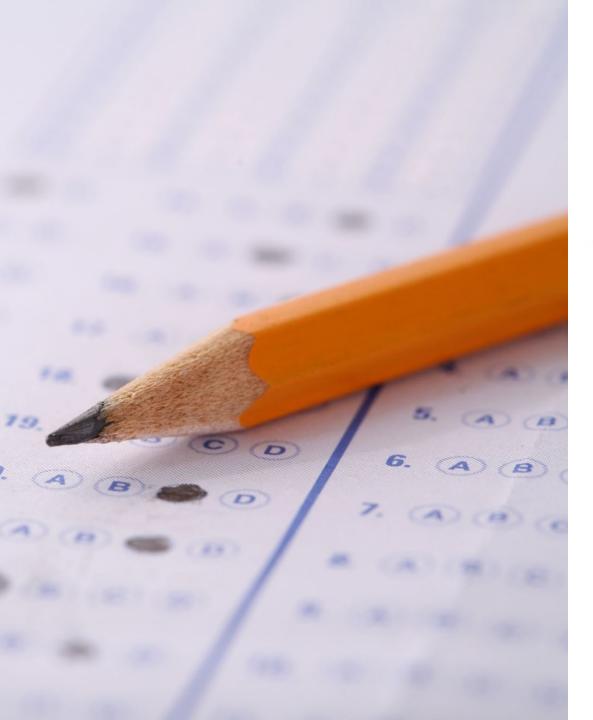
Medications?

- Evidence
 - Medications have a limited role in the treatment of PTSD and Trauma-Related Disorders
- Times to consider the use of medications.
 - Comorbidities
 - Anxiety/Depression
 - Hypervigilance
 - Paranoia

Emergent Situations

In Oklahoma, "every person having reason to believe that a child under the age of eighteen (18) years is a victim of abuse or neglect shall report the matter promptly to the Department of Human Services."

10A O.S. § 1-6-102.



Trauma Protocol: ages 0-5 Step 1

- Screening
 - Survey of the Well Being of the Young Child
 - https://www.floatinghospital.org/The-Survey-of-Wellbeing-of-Young-Children/Overview
 - Bright Futures Pediatric Intake Form
 - https://www.brightfutures.org/mentalhealth/p df/professionals/ped intake form.pdf
 - Safe Environment for Every Kid
 - https://seekwellbeing.org
 - Young Child PTSD Checklist
 - https://medicine.tulane.edu/sites/g/files/rdw7
 61/f/YCPC v5 23 14.pdf



Step 2:

- Negative Screening
 - Education
- Positive Screening
 - Education about trauma
 - Refer for treatment
 - Child Parent
 Psychotherapy
 - Attachment and Biobehavioral Catchup

Need Help?

Infant and Early Childhood Mental Health is a specialty in which certain therapists are trained.

For help finding therapists, call OKCAPMAP (918-710-3600) or the Oklahoma Warmline (1-888-574-KIDS).





Peritrauma

The D-E-F
Framework for
Trauma
Informed
Pediatric Care



Interested in more training?



Pediatric Approach to Trauma, Treatment and Resilience

Other Resources

- Mental Health Strategies for Pediatric Care
- Boston Medical Center: 18 RECOMMENDATIONS
 FOR INTEGRATING TRAUMA INFORMED
 APPROACHES INTO PEDIATRIC PRACTICE:
 https://www.bmc.org/sites/default/files/Programs
 ms Services/Programs for Children/Urban-Children-Families/TIC-recommendations-FINAL.PDF
- Oklahoma Pediatric Psychotropic Medication Resource Guide: https://oklahoma.gov/content/dam/ok/en/okhc a/documents/a0402/25347.pdf

Mental Health Strategies for Pediatric Care



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