

The Missing ACE- FASD & In-utero Trauma

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3 Types of Trauma

-Bruce Perry



1. **Intrauterine insult**; prenatal alcohol or drug exposure, stress during pregnancy
2. **Early neglect or seperation**; mother who is inattentive due to stress, depression, domestic violence, etc., orphanage; but also a child who isn't with his birth mother whether voluntary or involuntary
3. **Classic trauma**; abuse, molestation, witnessing violence, etc.




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“Of all the substances of abuse (including cocaine, heroin, and marijuana), alcohol produces by far the most serious neurobehavioral effects in the fetus.”
 —IOM Report to Congress, 1996

Alcohol or drugs:

Which is more damaging to a developing fetus?


ALCOHOL!!



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Varying Impact of Exposure to Substances

	Alcohol	Opioids	Marijuana	Meth	Cocaine	Nicotine
Facial anomalies	Strong	Effect	None	None	None	None
Behavior Challenges	Strong	Effect	Effect	Effect	Effect	Effect
Cognitive Impairment	Strong	Effect	Effect	Effect	Effect	Effect
Growth Issues	Strong	None	None	None	Effect	None
Physical/Medical Effects	Strong	Effect	None	Effect	Effect	None
Withdrawal	None	Strong	None	Maybe*	None	None
Birth Weight	Strong	Effect	None	Effect	Effect	Effect



Prenatal Substance Abuse: Short- and Long-term Effects on the Exposed Fetus; Marylou Behnke, MD, Vincent C. Smith, MD, [Pediatrics](#), 2013 Mar;131(3):e1009-24. doi: 10.1542/peds.2012-3931. Epub 2013 Feb 25.

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Fetal Alcohol Spectrum Disorders- FASD



- Most people have heard of FAS, Fetal Alcohol Syndrome. It became a spectrum disorder in 1996.
- FASDs are a set of physical, behavioral and cognitive disorders affecting people who were prenatally exposed to alcohol.
- FASDs are permanent disabilities that result in lifetime brain injury/damage.



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Fetal Alcohol Spectrum Disorder is an umbrella term.



- Fetal Alcohol Syndrome -FAS (1973): 3 facial features, growth deficits, meet the cognitive profile
- Partial Fetal Alcohol Syndrome- pFAS (1996): Have some of the physical features but not all. Match the cognitive profile
- Alcohol Related Neurodevelopmental Disorder- ARND (1996)- new name for FAE (Fetal Alcohol Effect): No physical features but brain was impacted by the alcohol. Must have confirmation of alcohol exposure in utero and match the cognitive profile.

The FASD Umbrella

- DSM 5 (2013): Can list any FASD as: "other specified neurodevelopmental disorder" [315.8] Then add the specifier: "neurodevelopmental disorder associated with prenatal alcohol exposure" (ND-PAE)



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Fetal Alcohol Syndrome -Facial Features



- Smooth philtrum
- Thin upper lip
- Short palpebral fissures



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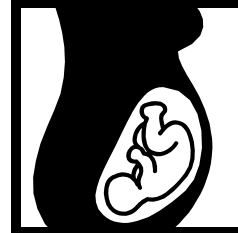


**Only 10-20% of
people on the
spectrum have the
facial features**

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Factors that impact the degree of brain injury to the developing fetus

- Timing of exposure
- Resiliency of fetus
- Metabolism and diet of the mother
 - If mom's iron level is low, more likely fetus is damaged
- Blood alcohol concentration of the mother



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Twin Research

- Identical Twins had virtually identical results of injury from Prenatal Alcohol Exposure (PAE).
- Fraternal twins had vastly different outcomes from the prenatal alcohol exposure.
- Conclusion: **Fetal Genetic factors into the level of damage that a fetus receives from the PAE**



(Hemingway et al., Twin study confirms virtually identical prenatal alcohol exposures can lead to markedly different fetal alcohol spectrum disorder outcomes fetal genetics influences fetal vulnerability. Advances in Pediatric Research, 2019)

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Prevalence

- ▶ 2018 research estimates that 1 out of 20 children have an FASD, but mostly go undiagnosed or are misdiagnosed. (May, 2018). *
- ▶ 1 out of 40 children have an Autism diagnosis according to 2018 research. **
Autism and FASD have many similarities.

**May, P.A., et al. Prevalence of Fetal Alcohol Spectrum Disorders in 4 US Communities. JAMA. Online February 6, 2018.*

***Guifeng Xu et al. Prevalence and Treatment Patterns of Autism Spectrum Disorder in the United States, JAMA, December 3, 2016*



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Red Flags

question to consider



- Was the child in foster care or is he/she adopted?
 - NOFAS estimates that 70-80% of children in foster care were prenatally exposed to alcohol and have an FASD.
 - 29-68% of Russian adoptions are estimated to show severe alcohol-related damage
- Is there history of chemical dependency issues for child or for their parents?
- Is child is easily distracted, hyperactive, inattentive and impulsive?
- Have they been involved with the criminal justice system?
- **Does the child continue to make the same mistakes?**
- **Does the child appear to not learn from consequences?**



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Red Flags



- Are there multiple diagnoses like Bi-Polar, ADHD, Reactive Attachment Disorder, Autism, Conduct Disorder, etc.?
- Does the child consistently display extreme behaviors (aggression, emotional instability)?
- Are there sleeping and/or eating Issues?
- Does the individual have an average IQ but functions at a much lower capacity?
- Are vivid fantasies and perseveration problems present?
- Can the child repeat a rule, but cannot follow it?
- Does the individual seem unaware of what they have done or why they are in trouble?



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4th-6th Grades

Around the ages of 9-11, difficulties in academic performance and behavior in the school setting become more apparent.

It is important to consider screening for an FASD if parents are expressing concerns over new behavioral issues and/or academic struggles particularly around the 4th to 6th grade level.



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Infancy & Early childhood



- Some children who were prenatally exposed, have medical and developmental struggles at birth and in early development
- The majority of children who were prenatally exposed are fairly on track developmentally in early development, and do not raise any red flags at pediatric check ups, or early childhood screenings

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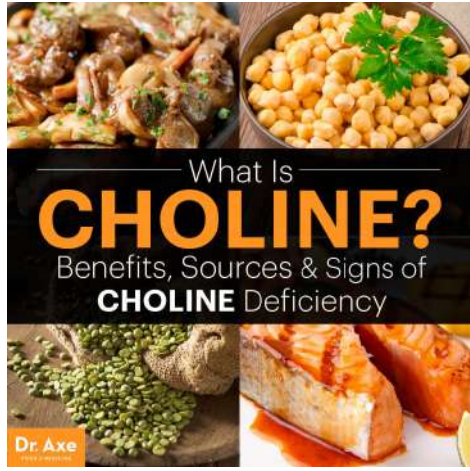
Early Intervention is CRUCIAL



- Diagnosis before age 6 is a protective factor
- Parents can use more effective techniques if they understand the infant's brain- therefore not unintentionally causing more trauma
- Choline supplements before age 5 can help repair some of the brain injury

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Choline in early development




Research at the University of Minnesota is showing promising results of choline in children ages 2-5. It is helping to improve their neuro-cognitive functioning. Consult with your Pediatrician.

Introduce choline rich foods to children when they start taking solid foods, after figuring out potential allergens.

What Is CHOLINE?
Benefits, Sources & Signs of CHOLINE Deficiency


Dr. Axe



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Diagnosis

- ❖ Confirmation of alcohol consumption during pregnancy is needed in order to diagnosis everything under the spectrum except for FAS (if they have the facial features, confirmation of exposure is not required).
- ❖ **FASD: Focus of Diagnosis**
 - ❖ Growth Deficits
 - ❖ Central Nervous System Problems
 - ❖ History of prenatal alcohol exposure
 - ❖ Facial abnormalities (FAS, pFAS only)



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10 Brain Domains



- Cognition
- Attention
- Achievement
- Motor
- Adaptation
- Executive Function
- Memory
- Sensory and Soft Neurological Signs
- Language
- Social Communication



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Maryland FASD Resources

<https://nofas.org/state-resources-for-maryland/>



resource-directory/

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Why Diagnosis?



- Decreases anger/frustration for all
- Helps to know the negative behaviors result from a disability and ARE NOT willful
- Helps the individual receive appropriate services early
- The individual will need a lifetime of external supports.
- Set realistic expectations
- Decreases risk of secondary disabilities (law/school)
- Provides better self awareness and acceptance
- Prevents next pregnancy exposure
- Increases understanding that FASD is a lifetime disability based on permanent, irreversible brain damage



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How to ask...



- Hard questions
 - Do not just ask if they used alcohol while pregnant
 - “Is there anyway you could have been using alcohol before you knew you were pregnant?”
 - Empathize- “This has happened to several of my friends and family” (It probably actually has!)



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- ▶ Highly verbal
- ▶ Energetic, hard working
- ▶ Caring, kind and loyal
- ▶ Curious and involved
- ▶ Friendly/ likeable
- ▶ Talkative
- ▶ Strong desire to be liked
- ▶ Don't hold a grudge
- ▶ Good with younger children
- ▶ Not malicious
- ▶ Every day is a new day!


Strengths




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Most common strength-

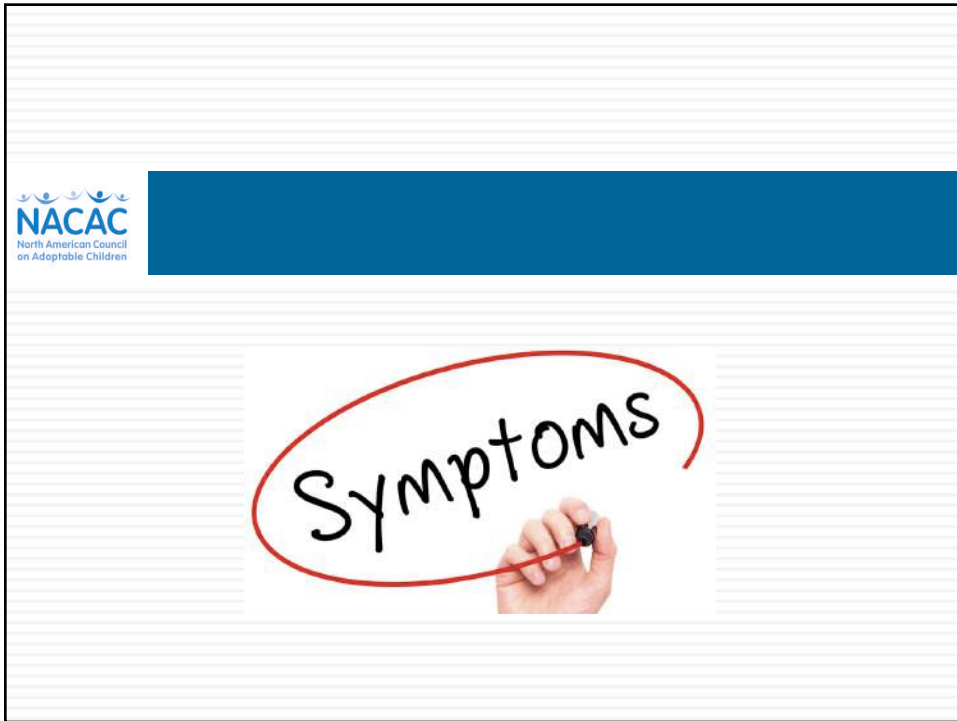
Good with younger children



Most Should not babysit younger children without adult supervision



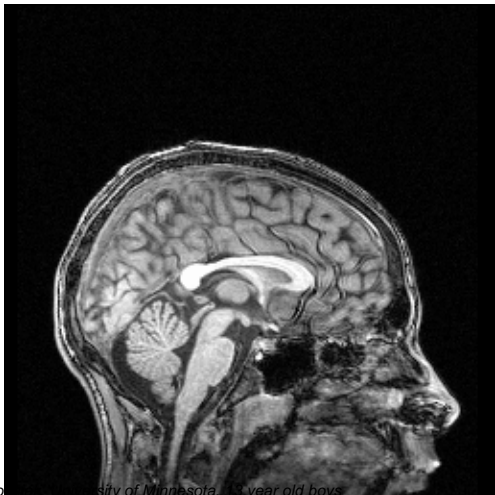
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Corpus Callosum Damage

Healthy/typical 13 year old brain



** Images courtesy of Dr Jeffrey Wolcott, University of Minnesota, 13-year old boy*

The slide has a white background with a blue header bar. The title "Corpus Callosum Damage" is in blue. Below it is a small NACAC logo. The text "Healthy/typical 13 year old brain" is in black. To the right is a sagittal MRI scan of a brain. At the bottom left is a larger NACAC logo. At the bottom right is a small italicized text credit.

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Corpus Callosum Damage

Healthy/typical 13 year old brain

Look at the Corpus Callosum



** Images courtesy of Dr Jeffrey Wozniak, University of Minnesota, 13 year old boys*

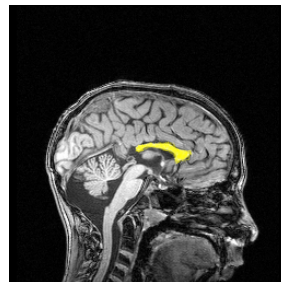
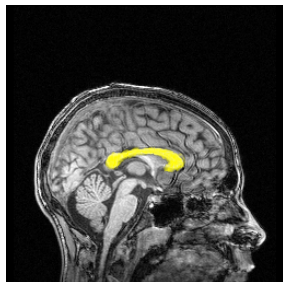
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Corpus Callosum Damage

Inconsistency is symptom of Corpus Callosum damage

Typical

FAS



** Images courtesy of Dr Jeffrey Wozniak, University of Minnesota, 13 year old boys*

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Impulse Control



- Frontal lobe, part of executive function skills
 - Stealing
 - Sexual choices
 - Cursing/verbal aggression
 - Physical aggression



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Memory struggles



- There is a difference between short term and long term memory.
- Short term memory is what is called working memory.
- Working memory is almost always a deficit in people with an FASD




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Sensory Issues

SIGHT

CAN BE SENSITIVE TO BRIGHT OR FLUORESCENT LIGHTS



TASTE

CAN STRUGGLE WITH TEXTURES OF FOODS OR BE VERY FUSSY EATERS

TOUCH


Fright or Flight response. Can be incredibly sensitive to being touched

HEARING

Sometimes are able to hear every little humming and bussing noise

SMELL

Odors can have huge impact, leading to explosions



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Difficulty Generalizing

- Struggle to transfer skills to different situations, with different people, different places, etc.

- $4+4=8$
- 4

$$\begin{array}{r} +4 \\ \hline 8 \end{array}$$

**** This is also what makes them so vulnerable**



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Math Struggles

$$2+2=5$$

- When FASD children were imaged by a technique called DTI (Diffusion Tensor Imaging), the 5 areas in the brain important in mathematical ability showed damage—and the amount of damage correlated highly with their math scores on standardized tests.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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Sleep Challenges

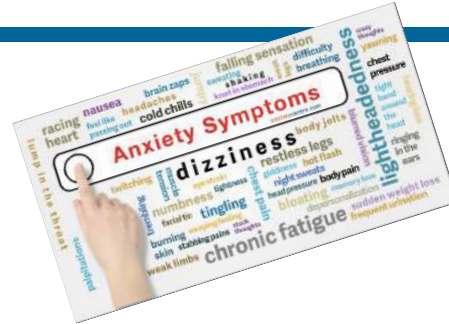


- Sleep is directly related to brain function
- Important to not get upset with our impatient with the person/child if they are not sleeping well

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ANXIETY

- Heart rate Increases
- Body temp rises
- Body tenses up
- All tied to brain function
- Keep anxiety as low as possible through sensory breaks, interventions, relaxed testing (if any), etc.



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Concrete thinking can look like narcissism

Concrete Thinker

- See in the box
- Don't read others feelings very well
- See life through a camera lens, they are not in view
- Will hang with anyone who will be their friend

Narcissism

- Look at me
- I am better than you
- Exploitive/takes advantage of others intentionally
- Need to hang with people of high status



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Typical symptoms/challenges



- Poor social skills
- Inability to manage money
- Difficulty with understanding the passage of time
- Poor problem solving skills
- Stubbornness/perseveration
 - Very similar to children with autism
- Struggle to find right words
- Poor Executive Function Skills



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Social Media & FASD



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Why they struggle with social media/online world



- Attracted to social media as it is less anxiety producing than in person interactions
- Struggle to interpret fact and fiction even more when can't see body language, tone of voice, or facial expression
- Oxytocin levels can increase by 15% when on social media and cortisol can decrease by 10-15% when on social media.
- Poor social skills = poor social media skills



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Websites



- ▶ Proof Alliance (formerly MOFAS)
 - ▶ www.proofalliance.org
- ▶ FASD Toolkit
 - ▶ www.fasdtoolkit.com
- ▶ National Organization on Fetal Alcohol Syndrome
 - ▶ www.NOFAS.org
- ▶ Centers for Disease Control (CDC)
 - ▶ <https://www.cdc.gov/ncbddd/fasd/facts.html>
- ▶ Oregon Behavioral Consultants YouTube Series
 - ▶ <https://www.youtube.com/channel/UCQ6qtxeMCZ-vgC9tG7LokNw/videos>



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Podcast- FASD Success Show – Jeff Noble

www.fasdsuccess.com

- ▶ Multiple adults on the spectrum are interviewed
- ▶ Mindfulness
- ▶ Housing
- ▶ Managing anxiety

www.fasdsuccess.com

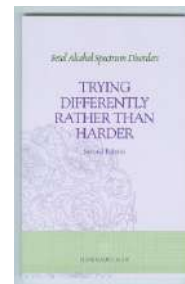
- ▶ Diagnosis
- ▶ Rages
- ▶ MRI research
- ▶ Choline research
- ▶ Sleep
- ▶ Online issues



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Books

- Trying Differently Rather Than Harder, Diane Malbin
- Damaged Angels, Bonnie Buxton
- The Best I Can Be, Liz Kulp
- When Rain Hurts, Mary Evelyn Greene
- Fetal Alcohol Syndrome, Ann Streissguth
- The Braided Cord, Liz & Jodee Kulp
- Children's Friendship Training, Fred Frankel (social skills curriculum)



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