

Fetal Alcohol Spectrum Disorders in Children



This is an educational fact sheet developed to assist clinicians to identify and develop treatment plans for children affected by fetal alcohol spectrum disorders; it is not intended to dictate any new mandatory or regulatory requirements of mental health plans nor providers.

What are Fetal Alcohol Spectrum Disorders (FASD)?

FASD is an umbrella term used to describe a full range of effects that can occur in an individual whose mother consumed alcohol during pregnancy. It is estimated that approximately 1 out of 100 people in the United States may have FASD. Effects of FASD are life long and may include physical problems and/or problems with behavior and learning.

Fetal Alcohol Spectrum Disorders encompasses several diagnoses:

- **Fetal Alcohol Syndrome (FAS)** - (occurs in 0.5-2 per 1000 live births) People with FAS might have abnormal facial features, growth problems, and central nervous system (CNS) problems.
- **Fetal Alcohol Effects (FAE)** - This term was previously used to describe intellectual disabilities and problems with behavior and learning in a person whose mother drank alcohol during pregnancy. In 1996, the Institute of Medicine (IOM) replaced FAE with the terms alcohol-related neurodevelopmental disorder (ARND) and alcohol-related birth defects (ARBD).
- **Alcohol Related Birth Defects (ARBD)** - FAS physical appearance but may not have cognitive & behavioral symptoms.
- **Alcohol-Related Neurodevelopmental Disorder (ARND)** - neuropathology without growth failure or facial dysmorphism.

Table I: Outcomes of Intrauterine Exposure to Alcohol:

		STRUCTURAL ABNORMALITIES?	
		NO	YES
BEHAVIORAL ABNORMALITIES?	NO	Unaffected Child	Alcohol Related Birth Defects (ARBD)
	YES	Alcohol-Related Neurodevelopmental Disorder (ARND)	FAS Represents the severe end of the FASD spectrum.

Who Is Affected By FASD?

Approximately 1 out of every 100 people in the United States is expected to have FASD,¹ but recent evidence suggests that rate could be as high as 5%.

- Using the more conservative approximation and California birth data, it is estimated that about 5,550 babies are born with an FASD in California every year.
- Using California's population in 2008 at least 380,000 citizens may be struggling in life because of prenatal exposure to alcohol.

As A Mental Health Provider, What Do I Need To know?

- 1) **FASD is a spectrum disorder.** On this spectrum, there are great variations among children. Each child should be fully evaluated (medical and mental health) to identify what features and the severity of symptoms he/she has. Simply identifying alcohol exposure during gestation and/or physical and/or neuro-developmental problems is not an adequate definition for treatment planning.
- 2) **Multiple, often cumulative risk factors:** Maternal ingestion of alcohol during pregnancy is one factor, but the amount and timing of alcohol exposure required to cause FASD is not known; it is generally thought that when alcohol is ingested early during pregnancy, and in larger quantities, the effect on the fetus is potentially worse than later and/or lighter alcohol consumption. It is also important to consider the nutritional and psycho-social elements present during the pregnancy, as these may also negatively impact a healthy outcome.
- 3) **Central nervous system dysfunction:** Intrauterine alcohol exposure may be associated with widespread impact on the developing brain. This is clinically variable so each child should have a full evaluation to identify what domains are affected. Evaluation should cover these areas:
 - **Overall development (I.Q):** FAS is the most frequent preventable cause of Intellectual Disability, but only 25% of individuals with FAS have IQ less than 70.
 - **Attention/Impulsivity:** These problems may be subtle, or may meet criteria for attention-deficit/hyperactivity disorder (ADHD). Deficits in visual attention may be greater than deficits in auditory attention.
 - **Cognitive (Executive) functioning:** Children may have slow processing, difficulty abstracting, and difficulty acquiring reading and arithmetic skills. Memory problems: children may have more difficulty acquiring information than remembering it. Deficits may be seen in any/all of the executive functions (cognitive flexibility, selective inhibition, planning ability, fluency, and concept formation and reasoning).
 - **Language[†]:** Expressive language may appear less impaired than receptive; this may be due to auditory processing difficulties or, memory and attention problems may interfere with processing verbal information. Because children with FAS are small and may be sociable and friendly, language impairment may not be obvious. However, they may have marked deficits in word comprehension and naming ability.
 - **Neuro-motor:** Children with FAS may have delayed motor development, balance impairment, and/or fine motor dysfunction (tremor, weak grasp, poor hand-eye coordination).
- 4) **Judgment:** poor, related to impulsivity, unreliable memory, difficulty with self-reflection, problems with cause-effect thinking.
- 5) **Social Emotional Disabilities[‡]:** Children with FAS may have internalizing (anxiety, depression, Mania/hypomania) and/or externalizing (ADHD, Oppositional Defiant Disorder, Conduct Disorder) and as well, may have post-traumatic stress disorder or develop schizophrenia (See Paley and O'Connor² for a review).
- 6) **Adaptive and social skills:** Children with FAS are at a higher risk for problem behaviors (social, inattention, aggression) beyond what can be explained by their IQ level.
- 7) **Family factors:** Similar risk factors that lead to alcohol exposure during pregnancy may make it more difficult for parents to function, and can jeopardize secure attachment³. Demands of parenting are particularly high in caring for a child with special needs⁴.



[†] Consideration must be taken into account when working with children from different racial/ethnic backgrounds who are Limited English proficient (LEP) persons or non-English speakers; bilingual population children may have different levels of expressive language in primary language as compared to secondary language.

[‡] Careful consideration should be made to include role of cultural context in which this child lives, assessments should include the role cultural plays in child's life.

What Interventions Should I Consider?

Three general points:

- 1) Clinical symptoms vary between children, so there is no “one-size-fits-all” treatment plan.
- 2) Children’s capacities vary, so their behavior is not consistent, and treatment planning, including family support, should take this into account.
- 3) Psychological testing needs to be interpreted in the context of the client’s culture⁵, interviewing and gathering collateral information from family and community resources is essential⁶.

TABLE 2- Summary of Ideal Interventions for Children with FAS

Clinical Feature of FAS	Treatment planning and intervention
A spectrum disorder	Full evaluation to identify the child’s areas of handicap.
Multiple, often cumulative risk factors	A history of alcohol exposure is key, but other risk factors must be assessed and addressed.
Central Nervous system dysfunction	Evaluation should not be limited to IQ and educational achievement; it should also include assessment of 1-4 below.
1) Attention	Standard evaluation (e.g. behavioral checklists, computer-based measures) of ADHD is necessary and could be supplemented with assessment of visual and auditory attention, sustained attention, attention-shifting, and selective attention.
2) Cognitive (Executive) functioning	Neuropsychological or psycho educational testing, to assess processing rate, learning pattern, cognitive flexibility, planning ability, and concept formation, will assist in developing an educational strategy.
3) Language:	Formal testing of expressive and receptive language will identify if the child’s language lags behind his/her IQ. If the child has a significant language handicap, “talking therapies” will be less useful than behavioral approaches.
4) Neuro-motor	Formal testing of gross and fine motor development, balance, and coordination will indicate whether specific intervention is needed, and will allow planning for support in skill acquisition (e.g. writing) and age-appropriate athletic activities
Judgment	Poor judgment, combined with apparent language fluency, poses challenges to discipline and learning in the home and at school, and needs to be assessed to develop a treatment plan that supports family and educators.
Social Emotional Disabilities	Evaluation by a child psychiatrist or psychologist is necessary to distinguish between symptoms that meet criteria for DSM –IV disorders, and those that are associated with the stresses of living with neuro-cognitive disability. In these children, it is important to consider behavioral and emotional symptoms in the context of the child’s neuro-developmental assessment, rather than generating diagnoses on the basis of symptom lists.
Adaptive and social skills	Problem behaviors (poor social skills, aggression) interfere with school adjustment, family harmony, and with making friends. Children with FAS are at risk for mental health problems (over 90%), conduct problems in school (60%), trouble with juvenile justice/incarceration (45-60%), alcohol or drug dependence (over 80%), and eventual dependent living over (80%).
Family factors	Predictors of Stress ⁷ . Care for children with impaired executive functioning, poor adaptive functioning and internalizing/externalizing behavior problems are stressful for parents. In addition, families may struggle to obtain an accurate diagnosis, and if they are biological parents, may be subject to stigmatization and guilt.

References:

- 1 Steissguth AP et al. (2004): *Risk Factors for Adverse Life Outcomes in Fetal Alcohol Syndrome and Fetal Alcohol Effects*. Developmental and Behavioral Pediatrics 25(4): 228-238.
- 2 Paley B & O'Connor M (2009) *Intervention for Individuals with Fetal Alcohol Spectrum Disorders: Treatment Approaches and Case Management*. Developmental Disabilities Research Reviews 15: 258-267.
- 3 O'Connor MJ, Sigman M & Kasari C (1992): *Attachment behavior of Infants Exposed to Alcohol Prenatally: Mediating Effects of Infant Affect and Mother-Infant Interaction*. Development and Psychopathology 4: 243-256.
- 4 Paley B: (2009) *Fetal Alcohol Spectrum Disorders – Shedding light on an Unseen disability*; Developmental Disabilities Research Reviews 15: 167-9.
- 5 Dana, Hornby, and Hoffman, (1984): *Local Norms or personality Assessment for Rosebud Sioux*. White Cloud Journal, .3 (2): 17-25.
- 6 Cross, T., Bazron, B., Dennis, K., and Isaacs, M (1989) *Toward a Culturally Competent System of Care*, Volume 1. Washington, D.C.: Georgetown University.
- 7 Paley B, O'Connor MJ, Frankel F, U Marquardt R (2006) *Predictors of Stress in Parents of Children with Fetal Alcohol Spectrum Disorders*. Developmental and Behavioral Pediatrics 27 (5) 396-404

Resources:

- 1 Riley EP and McGee C: Symposium (2005): *Fetal Alcohol Spectrum Disorders: An Overview with Emphasis on Changes in Brain and Behavior*.
- 2 Institute of Medicine (1997). *Fetal Alcohol Syndrome: Diagnosis, Epidemiology, Prevention and Treatment*; National Academy Press: Washington DC.
- 3 Hoyme HE et al (2005) *A Practical clinical approach to diagnosis of Fetal Alcohol Spectrum Disorder*. Pediatrics 115: 39-47.

Links:

- 1 Center for Disease Control <http://www.cdc.gov/ncbddd/fasd/facts.html>
- 2 American Congress of Obstetricians and Gynecologist - http://www.acog.org/acog_districts/dist_notice.cfm?recno=1&bulletin=2929
- 3 SAMHSA Center for Excellence – The FASD Center <http://fasdcenter.samhsa.gov/>
- 4 National Association on Fetal Alcohol Syndrome <http://www.nofas.org/>
- 5 ADP Women's Page <http://www.adp.ca.gov/women/FASD.shtml>
- 6 FASD Publications from SAMHSA: <http://ncadistore.samhsa.gov/catalog/results.aspx?topic=230&h=drugs>

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