

Fetal Alcohol Spectrum Disorders (FASD) A Guide for Pediatricians and Mental Health Providers



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Collecting Data About Prenatal Alcohol Exposure (PAE).

Some alcohol use occurs in about 40% of pregnancies. Prenatal alcohol exposure is a common cause of premature birth, low birth weight, birth defects, learning disabilities, heart defects, mental disorders, and life long problems with independent living.

In this section you can use the tools provided to examine alcohol use during pregnancy. It will be helpful to note that illegal drug use increases risk for alcohol use.



One standard drink is 14 g of ethanol.

Screening for PAE

When was your last drink?

	When was your last drink?	
	Before	Pregnancy
		Pre-awareness Post-awareness
	Unexposed	Exposed Exposed & High Risk

Screening for alcohol use begins with one question.

Charting PAE During Pregnancy

- On average, how many days per week did you drink during pregnancy? _____ (a)
- On an average drinking day during pregnancy, how many drinks did you have? _____ (b)
- How many days per month did you have 4 or more drinks during pregnancy? _____ (c)
- What is the most you had to drink on any one day during pregnancy? _____ (d)
- What is a drink? Alcohol % _____ Drink vol _____

If drinking is reported, you can provide important information on frequency and quantity of alcohol use. This will be important for other professionals who will need this information for diagnosis and treatment when they interact with the family. Complete as many of these items as you can.

Drinking During Pregnancy

Total Exposure Throughout Pregnancy	
Days Exposed	80
Binge Days	80
# Standard Drinks (14 grams)	960
Hours Exposed	2,160
Total grams ethanol	13,440

Outcomes from drinking 4 beers each Friday and Saturday during the 40 weeks of pregnancy.

Drinking four beers results in about 17 hours of fetal exposure to alcohol.

You can learn about alcohol exposure in your location and population by going to www.online-clinic.com/calcs/calc-epid-expo-model.aspx

What PAE Forecasts

Prenatal	Labor & Delivery	Postnatal
<ul style="list-style-type: none"> • Smoking • Drug Use • Late and Infrequent Prenatal Care • Depression • Inadequate Nutrition • Miscarriage 	<ul style="list-style-type: none"> • Stillbirth • Prematurity • Birth Defects • Hospitalizations 	<ul style="list-style-type: none"> • Neglect • Abuse • Birth Defects • Poor Nutrition • Smoking • Parental Substance Abuse • Violence • Depression • SIDS

Prenatal alcohol exposure (PAE) is strongly associated with an increased risk for exposure to other environmental adversity and a wide-range of outcomes.

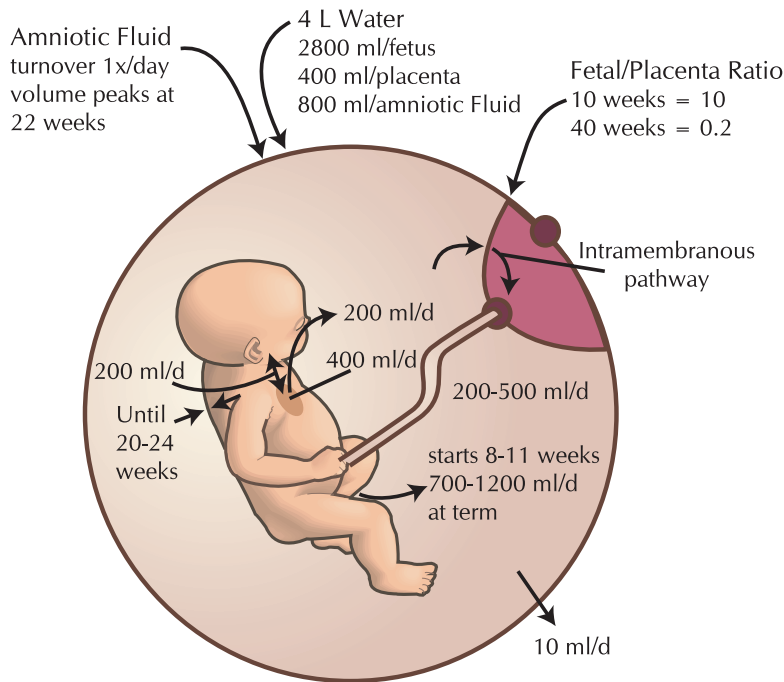
You can learn about the cost and prevalence of FASD in your location from this tool www.online-clinic.com/calcs/calc-prev-cost.aspx

Did this person have prenatal alcohol exposure?

- Yes. Alcohol use during pregnancy is confirmed.
 Uncertain
 No. We do not suspect PAE.

Very important information.

Maternal-Fetal Compartment Pathways for Ethanol



See the PAE Pocket card for a detailed explanation of the pathophysiology of prenatal alcohol exposure. Additional information is provided in the papers:

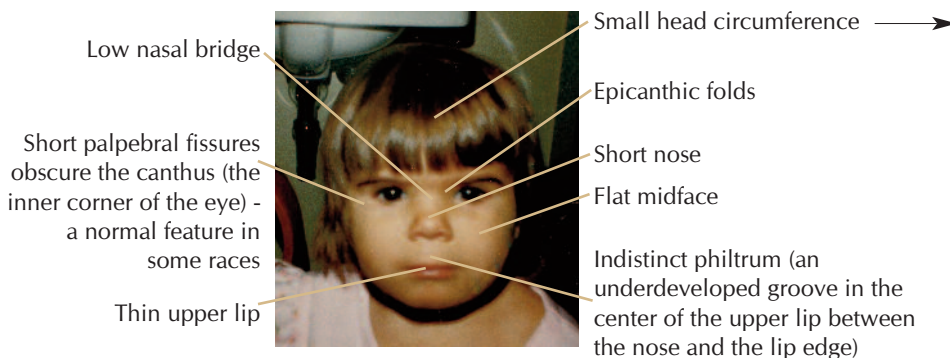
Burd, L., Roberts, D., Olson, M., & Odendaal, H. Ethanol and the placenta: A review. *Journal of Maternal-Fetal & Neonatal Medicine* 2007, 20(5), 361-375.

Burd, L., Blair, J., & Dropps, K. Prenatal alcohol exposure, blood alcohol concentrations and alcohol elimination rates for the mother, fetus and newborn. *Journal of Perinatology* 2012 32(9), 652-659.

Does this child need evaluation for FASD or followup as a child with high risk due to PAE?

Use this section to determine if the child might have a fetal alcohol spectrum disorder (FASD). If a sibling has been diagnosed with an FASD, or if a sibling or the mother is dead, the risk for FASD is high.

Fetal Alcohol Syndrome



Fetal Alcohol Syndrome:
The facial features of a child with fetal alcohol syndrome (FAS).

Other Essential Signs
Growth Impairment

Height
Weight

Brain Damage/Dysfunction
See chart on page 7.

The pocket card on diagnosis of FASD provides a useful guide on diagnosis and management.

FASD is not Just FAS

Most cases do NOT have

- Dysmorphic features
- Growth Impairment

Majority 80+ %

- Developmental Delay
- Cognitive Impairment
- Mental Disorders
- Substance Abuse Disorders

It's important to remember that most people affected with a fetal alcohol spectrum disorder do not have the facial features of FAS.

About 85% of FASD is alcohol related neurodevelopmental disorder.

FAS SCREEN FORM

Larry Burd, Ph.D.
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NAME/ID: _____ DOB: ___/___/___ AGE: _____ SEX (circle one): F M

RACE (circle one): Caucasian Hispanic Native American African American Other

DATE OF EXAM: ___/___/___

CIRCLE POINTS IF PRESENT:

HEIGHT	_____ Inches	If < 5th percentile:	10
WEIGHT	_____ Pounds	If < 5th percentile:	10
HEAD CIRC.	_____ Centimeters	If < 5th percentile:	10
HEAD AND FACE	EARS STICK OUT (Protruding Auricles) 4 SKIN FOLDS NEAR INNER EYE (Epicanthal Folds) 5 DROOPING OF EYELIDS (Ptosis) 4 CROSS-EYES, ONE OR BOTH EYES (Strabismus) 3 FLAT MIDFACE/CHEEKS (Hypoplastic Maxilla) 7 FLAT/LOW NOSE BETWEEN EYES (Low Nasal Bridge) 2 UPTURNED NOSE 5 GROOVE BETWEEN LIP & NOSE ABSENT OR SHALLOW (Flat Philtrum) 5 THIN UPPER LIP 4 CLEFT LIP OR CLEFT OF ROOF OF MOUTH (Present or Repaired) 4		
NECK AND BACK	SHORT, BROAD NECK 4 CURVATURE OF THE SPINE (Scoliosis) 1 SPINA BIFIDA (History of Neural Tube Defect) 4		
ARMS AND HANDS	LIMITED JOINT MOBILITY IN FINGERS & ELBOWS 4 PERMANENTLY CURVED, SMALL FINGERS, ESPECIALLY PINKIES (Clinomicrodactyly) 1 DEEP OR ACCENTUATED PALMAR CREASES 4 SMALL NAILS/NAIL BEDS (Hypoplastic Nails) 1 TREMULOUS, POOR FINGER AGILITY (Fine Motor Dysfunction) 1		
CHEST	SUNKEN CHEST (Pectus Excavatum) 3 CHEST STICKS OUT (Pectus Carinatum) 1 HISTORY OF HEART MURMUR OR ANY HEART DEFECT 4	} EXAM OPTIONAL	
SKIN	RAISED RED BIRTHMARKS (Capillary Hemangiomas) 4 GREATER THAN NORMAL BODY HAIR, HAIR ALSO ON FOREHEAD AND BACK (Hirsutism) 1		
DEVELOPMENT	MILD TO MODERATE MENTAL RETARDATION (IQ < 70) 10 SPEECH AND LANGUAGE DELAYS 2 HEARING PROBLEMS 1 VISION PROBLEMS 1 ATTENTION CONCENTRATION PROBLEMS 2 HYPERACTIVITY 5		

COMMENTS:

	Total Score: _____ (Refer if score 20 or above)
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For additional forms or information on FASD, contact:

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Age based impairments in FASD and Alcohol Related Neurodevelopmental Disorder

Age	Cognitive	Motor Skills	Socialization	Behavior
Infancy	Developmental delay Learning games Attention	Tremor Poor suckle Low tone Floppy	Interactive activities and games Attachment Reading others expressions	Sleep disturbance Regulation of behavior Irritable Temperament Impaired settling Cuddling
Toddler	Speech-language Understanding Toilet training Attention Impulsivity Memory	Tremor Fine motor Gross motor Balance Late crawling or walking	Frustration Threshold Separation problems Attachment Group participation	Difficulty in group settings Tantrums Aggression Stubborn
Child	IQ Academic deficits (math, spelling, written language) Humor Memory Recall Speech-language comprehension	Fine and gross motor Coordination Balance Handwriting Hand tremor	Requires increased supervision Difficulty sustaining friendships Group activities Games – activities with rules	ADHD Increased frustration Lack of persistence Increased risk taking Impaired independence for age Impaired executive functioning
Pre-Adolescence	IQ Academic deficits (math, spelling, written language) Planning Memory and recall Comprehension Generalization of skills and behaviors	Coordination Balance Handwriting Clumsy	Independent functioning Needs increased supervision Exploitation by others Appropriate boundaries	ADHD Impaired executive functioning Impulsive Repeats problem behavior Poor response to demands Risk taking
Adolescence/ Adults	Ability to work independently Self-care Money and time management Household routines Generalization of skills and behaviors Limited benefit from treatment programs without adaption	Writing Fine motor Balance Coordination	Independent functioning Peer exploitation Increased supervision Interpersonal boundaries	Increased risk for substance abuse Depression Anxiety Repeats problem behavior Increased risk taking Impulse control Planning ahead Meeting deadlines Asking for help Organization Record keeping Peer exploitation

FASD is Mostly Behind The Face:

It's Impairment



Day to Day it Looks Like This



"No, I won't."

"Let's wait; I want to think this over..."

"OK!"

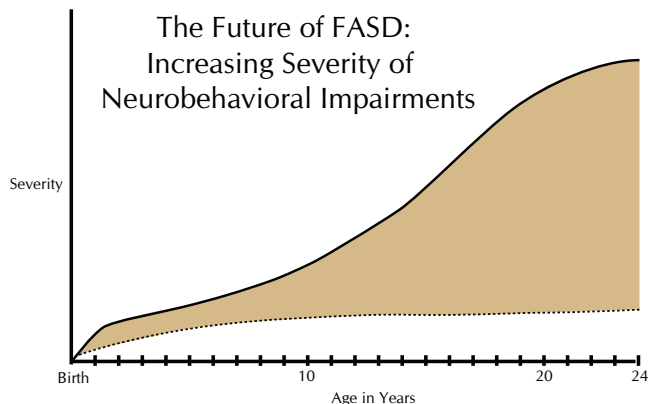
Does this child/family need management for current alcohol related problems, substance abuse for prenatal alcohol exposure, or as a person with FASD?

Risk Factors Ahead



These are key areas for prevention efforts for people with an FASD.

FASD Forecast

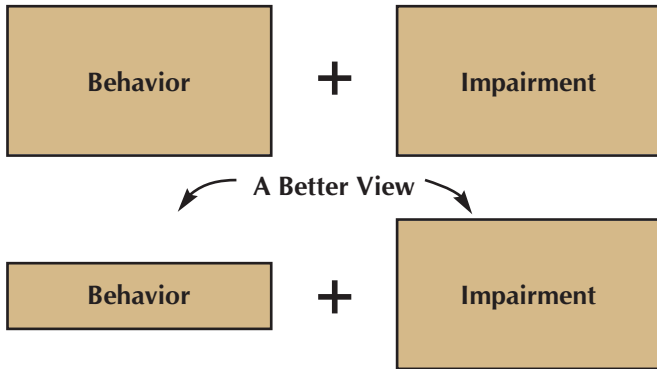


The presentation of FASD varies by age and development. Severity and complexity almost always increase with age.

Intervention Strategies

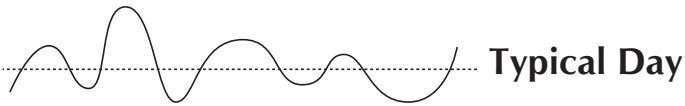
4 Keys to Success

1) FASD: What we First See



1) Most people with an FASD have fewer behaviors and more impairments than we first suspect.

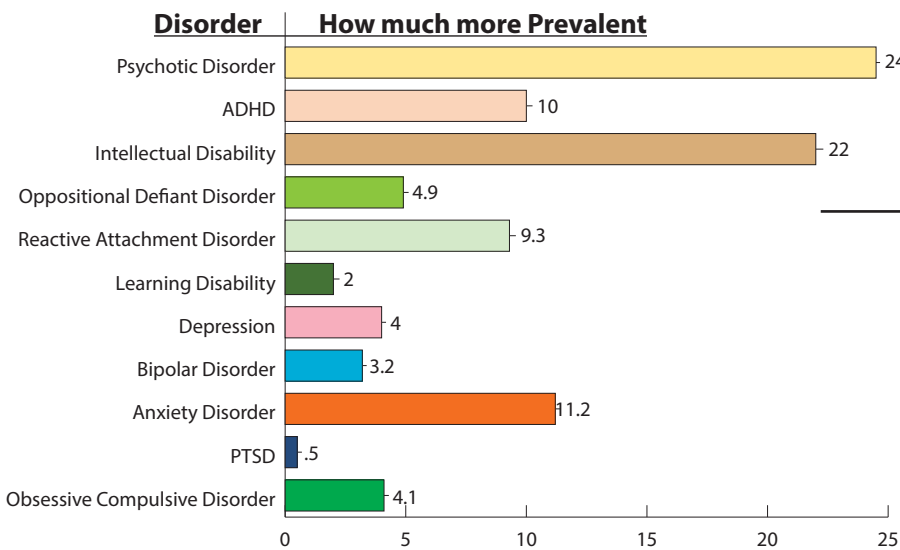
2) Inconsistent Performance



2) This results in day to day performance that is HIGHLY variable.

3)

FASD and Mental Disorders



3) It's not FASD OR... most of the time its FASD AND....

Intervention Strategies

4) Focus on Risk Reduction

- Abuse - Neglect
- Speech and Language
- Foster Care
- ADHD
- School
- Social Development
- Self Care
- Look Ahead
- Adult Impairments



4) Key components of a case management plan.

It is crucial to remember that FASD changes over time and that intervention must include plans to prevent future problems.

5) FASD: The Keys to Intervention

- Age & Development
- Dependent Phenotype
- Risk Reduction
- Long-term Plan
- Anticipatory Guidance
- Appreciate Impairment



5) The child will require ongoing assessments to have an optimal outcome.

It is much easier to prevent or minimize problem outcomes.

6) FASD Management Keys

- Yearly Follow-up
- Few Live Independently
- Remember the Familial and Generational Effects of FASD
- Services MATTER
- Develop a 10-year plan (What do we see 10 years from now)



6) Begin a case management plan with the understanding that this is likely a lifelong disorder requiring lifelong management.

Parents or Adults with an FASD

1) Does either parent have an FASD? →

- Do they have Neurocognitive Impairment
- Useful Measures
- Intelligence Testing
- Adaptive Behavior Testing
- Selectively-More Detailed Neurocognitive Testing

Key issues:

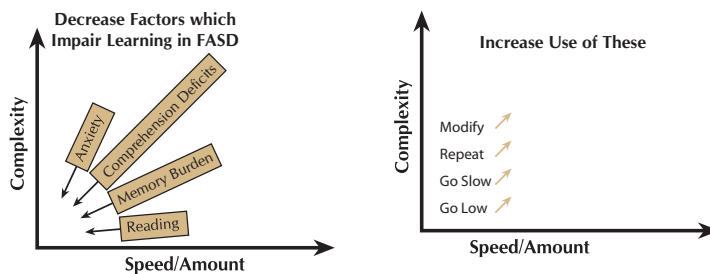
1) Adults with FASD have significant learning deficits which impact their ability to learn and remember.

2) Basic Cognitive Skills in Adolescents and Adults with FASD →

Characteristics	Grade Level	Percent Affected
Reading	5.0	Memory 80%
Reading comprehension	4.5	Attention (ADHD) 75%
Oral Comprehension	5.0	Executive Function Impairments 80%

2) This is common.

3) Learning in FASD →



3) Useful strategies:

- Modify content
- Repeat important content
- Modify pace with participants: ability to learn and remember
- Short directions
- Simplify

4) What should we change? →

Think family history

FASD is often familial

Address one problem at a time

allow participants to learn and apply solution before moving on to next topic

Provide short directions

an essential key for successful interventions

Make it concrete

picture guides are helpful for teaching key concepts

Work in small groups

allow more attention to topical material

Minimize anxiety, which increases impairment

especially important in treatment of substance abuse, sexual abuse or PTSD

Understand impairments

some problems cannot be treated and we need to learn how to adapt to them and minimize the effects

Address mental health concerns

need appropriate treatment

Go slowly

Treatment or interventions need to last longer

Planning for aftercare following substance abuse treatment is essential

improves generalization of learned behaviors

4) Essential factors for development of case management plans for adolescents and adults.

5) Success rate of Substance Abuse Programs →

It is important to understand how well your intervention programs work. Is the substance abuse program you use effective 5% or 40% of the time? The efficacy of the programs are important keys to participant success.

5) Most programs serving this population need to make more accommodations in response to their participants' learning impairments. Otherwise the content of the programs is not readily available to the participants.

Drinking During Pregnancy

Drinks Per Day	Cumulative Fetal Exposure (Drinks per day x 270)	Fetal Exposure to Absolute Alcohol in Oz.	Full Baby Bottles
1	270	135	15
2	540	270	33
10	2700	1350	168

