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 lifelong 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.

Prevalence of Substance Use/Abuse

Drinking During Pregnancy

The prevalence of drinking during pregnancy is high. Does this woman fit into any of these categories? When taking a history remember that drug use does not exclude alcohol use. It increases risk.

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

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

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

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 ________

One standard drink is 14 g of ethanol.

If the mother or other reliable reporter is unavailable, you can provide information to estimate exposure risk for this fetus or baby and their siblings.

Estimating Exposure Risk

Maternal Risk Score

Score

Risk Category
0 None
5 Low
20-40 Moderate
45-50 High
55-105 Very High

Did this person have prenatal alcohol exposure?

Yes. Alcohol use during pregnancy is confirmed.

Uncertain

No. We do not suspect PAE.
Most cases do NOT have
- Dysmorphic features
- Growth Impairment

Majority 80+% 
- Developmental Delay
- Cognitive Impairment
- Mental Disorders
- Substance Abuse Disorders

Fetal Alcohol Syndrome

- Low nasal bridge
- Short palpebral fissures obscure the canthus (the inner corner of the eye) - a normal feature in some races
- Thin upper lip
- Small head circumference
- Epicanthic folds
- Short nose
- Flat midface
- Indistinct philtrum (an underdeveloped groove in the center of the upper lip between the nose and the lip edge)

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

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.

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

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


**FAS SCREEN FORM**

**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:**

<table>
<thead>
<tr>
<th>Height</th>
<th>Weight</th>
<th>Head Circ.</th>
<th>Head and Face</th>
<th>Neck and Back</th>
<th>Arms and Hands</th>
<th>Chest</th>
<th>Skin</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inches</strong></td>
<td><strong>Pounds</strong></td>
<td><strong>Centimeters</strong></td>
<td><strong>EARS STICK OUT (Protruding Auricles)</strong></td>
<td><strong>SHORT, BROAD NECK</strong></td>
<td><strong>LIMITED JOINT MOBILITY IN FINGERS &amp; ELBOWS</strong></td>
<td><strong>SUNKEN CHEST (Pectus Excavatum)</strong></td>
<td><strong>RAISED RED BIRTHMARKS (Capillary Hemangiomas)</strong></td>
<td><strong>MILD TO MODERATE MENTAL RETARDATION (IQ &lt; 70)</strong></td>
</tr>
<tr>
<td>If &lt; 5th percentile:</td>
<td>If &lt; 5th percentile:</td>
<td>If &lt; 5th percentile:</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

**COMMENTS:**

For additional forms or information on FASD, contact:
Larry Burd, Ph.D.
501 N. Columbia Road, Stop 9037
Grand Forks, ND 58202-9037
701-777-3683
www.online-clinic.com
larry.burd@med.und.edu

**Total Score:**
(Refer if score 20 or above)
In order to complete this checklist:
1) Behaviors must be impaired for the age of the person being assessed.
2) Interviewer needs to have known the person being assessed for at least one month.

<table>
<thead>
<tr>
<th>BEHAVIOR</th>
<th>3-6 YEARS</th>
<th>7 YEARS +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperactive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impulsive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorganized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seems unaware of consequences of actions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No fear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would leave with a stranger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor social skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Few friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will talk or interact with anyone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easily manipulated and set up by others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socially inept (inappropriate speech or touching)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty staying on topic during conversation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always talking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocktail speech - little content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too loud</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can’t remember from one day to the next</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below average IQ (&lt; 85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor school performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspended or expelled from school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor sleeper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can’t follow routine - needs reminders to get dressed, brush teeth, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temper tantrums</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme mood swings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires constant supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Been in trouble with the law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpatient treatment for mental health or substance abuse, or in jail for a crime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate sexual behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor motor skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has or needs glasses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had foster care or was adopted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication for behavior - ever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother used alcohol during any pregnancy (OPTIONAL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother used alcohol in last five months of this pregnancy (OPTIONAL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother has been in treatment for alcohol use (OPTIONAL)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For additional forms or information on ARND, contact:
Larry Burd, Ph.D.
501 N. Columbia Road, Stop 9037
Grand Forks, ND 58202-9037
701-777-3683
www.online-clinic.com
larry.burd@med.und.edu

TOTAL CHECKED: 16 20
(Continue assessment if score is greater than or equal to above)
<table>
<thead>
<tr>
<th>Age</th>
<th>Cognitive</th>
<th>Motor Skills</th>
<th>Socialization</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infancy</td>
<td>Developmental delay&lt;br&gt;Learning games&lt;br&gt;Attention</td>
<td>Tremor&lt;br&gt;Poor suckle&lt;br&gt;Low tone&lt;br&gt;Floppy</td>
<td>Interactive activities and games&lt;br&gt;Attachment&lt;br&gt;Reading others expressions</td>
<td>Sleep disturbance&lt;br&gt;Regulation of behavior&lt;br&gt;Irritable&lt;br&gt;Temperament&lt;br&gt;Impaired settling&lt;br&gt;Cuddling</td>
</tr>
<tr>
<td>Toddler</td>
<td>Speech-language Understanding&lt;br&gt;Toilet training&lt;br&gt;Attention&lt;br&gt;Impulsivity&lt;br&gt;Memory</td>
<td>Tremor&lt;br&gt;Fine motor&lt;br&gt;Gross motor&lt;br&gt;Balance&lt;br&gt;Late crawling or walking</td>
<td>Frustration&lt;br&gt;Threshold&lt;br&gt;Separation problems&lt;br&gt;Attachment&lt;br&gt;Group participation</td>
<td>Difficulty in group settings&lt;br&gt;Tantrums&lt;br&gt;Aggression&lt;br&gt;Stubborn</td>
</tr>
<tr>
<td>Child</td>
<td>IQ&lt;br&gt;Academic deficits (math, spelling, written language)&lt;br&gt;Humor&lt;br&gt;Memory&lt;br&gt;Recall&lt;br&gt;Speech-language comprehension</td>
<td>Fine and gross motor&lt;br&gt;Coordination&lt;br&gt;Balance&lt;br&gt;Handwriting&lt;br&gt;Hand tremor</td>
<td>Requires increased supervision&lt;br&gt;Difficulty sustaining friendships&lt;br&gt;Group activities&lt;br&gt;Games – activities with rules</td>
<td>ADHD&lt;br&gt;Increased frustration&lt;br&gt;Lack of persistence&lt;br&gt;Increased risk taking&lt;br&gt;Impaired independence for age&lt;br&gt;Impaired executive functioning</td>
</tr>
<tr>
<td>Pre-Adolescence</td>
<td>IQ&lt;br&gt;Academic deficits (math, spelling, written language)&lt;br&gt;Planning&lt;br&gt;Memory and recall&lt;br&gt;Comprehension&lt;br&gt;Generalization of skills and behaviors</td>
<td>Coordination&lt;br&gt;Balance&lt;br&gt;Handwriting&lt;br&gt;Clumsy</td>
<td>Independent functioning&lt;br&gt;Needs increased supervision&lt;br&gt;Exploitation by others&lt;br&gt;Appropriate boundaries</td>
<td>ADHD&lt;br&gt;Impaired executive functioning&lt;br&gt;Impulsive&lt;br&gt;Repeats problem behavior&lt;br&gt;Poor response to demands&lt;br&gt;Risk taking</td>
</tr>
<tr>
<td>Adolescence/Adults</td>
<td>Ability to work independently&lt;br&gt;Self-care&lt;br&gt;Money and time management&lt;br&gt;Household routines&lt;br&gt;Generalization of skills and behaviors&lt;br&gt;Limited benefit from treatment programs without adaption</td>
<td>Writing&lt;br&gt;Fine motor&lt;br&gt;Balance&lt;br&gt;Coordination</td>
<td>Independent functioning&lt;br&gt;Peer exploitation&lt;br&gt;Increased supervision&lt;br&gt;Interpersonal boundaries</td>
<td>Increased risk for substance abuse&lt;br&gt;Depression&lt;br&gt;Anxiety&lt;br&gt;Repeats problem behavior&lt;br&gt;Increased risk taking&lt;br&gt;Impulse control&lt;br&gt;Planning ahead&lt;br&gt;Meeting deadlines&lt;br&gt;Asking for help&lt;br&gt;Organization&lt;br&gt;Record keeping&lt;br&gt;Peer exploitation</td>
</tr>
</tbody>
</table>
The presentation of FASD varies by age and development. Severity and complexity almost always increase with age.

Does this person have evidence of developmental delay, birth defects, sibling with FASD, sibling death or intellectual deficits?

1. Yes, consider referral for FASD evaluation.
2. No, but person does need monitoring as high risk for future problems.
3. No reason for concern

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

These are key areas for prevention efforts for people with an FASD.
1) Focus on Risk Reduction
- Abuse - Neglect
- Speech and Language
- Foster Care
- ADHD
- School
- Social Development
- Self Care
- Look Ahead
- Adult Impairments

2) FASD: The Keys to Intervention
- Age & Development
- Dependent Phenotype
- Risk Reduction
- Long-term Plan
- Anticipatory Guidance
- Appreciate Impairment

3) FASD: What we First See
- Behavior + Impairment

A Better View

Behavior + Impairment

Inconsistent Performance

Typical Day

4) FASD Management Keys
- Yearly Follow-up
- Few Live Independently
- Remember the Familial and Generational Effects of FASD
- Services MATTER

1) It is much easier to prevent or minimize problem outcomes.

2) 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.

The child will require ongoing assessments to have the best outcome.

3) Most people with an FASD have fewer behaviors and more impairments than we first suspect. This results in day to day performance that is HIGHLY variable.

4) Begin a case management plan with the understanding that this is likely a lifelong disorder requiring lifelong management.
1) Does either parent have an FASD?
- Do they have Neurocognitive Impairment
- Useful Measures
- Intelligence Testing
- Adaptive Behavior Testing
- Selectively-More Detailed Neurocognitive Testing

2) Basic Cognitive Skills in Adolescents and Adults with FASD

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Grade Level</th>
<th>Percent Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>5.0</td>
<td>Memory 80%</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>4.5</td>
<td>Attention (ADHD) 75%</td>
</tr>
<tr>
<td>Oral Comprehension</td>
<td>5.0</td>
<td>Executive Function Impairments 80%</td>
</tr>
</tbody>
</table>

3) Learning in FASD

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 after substance abuse treatment is essential
     - improves generalization of learned behaviors

5) Success rate of Substance Abuse Programs

   It is important to understand how well your intervention program works. 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.

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

2) We can improve the success rate of treatment programs by building in these treatment keys. See #4 below.

3) Useful strategies:
   - Modify content
   - Repeat important content
   - Modify pace with participants' ability to learn and remember
   - Short directions
   - Learn reading and audio content

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

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.
<table>
<thead>
<tr>
<th>Drinks Per Day</th>
<th>Full Baby Bottles</th>
<th>Fetal Exposure to Absolute Alcohol in Oz.</th>
<th>Cumulative Fetal Exposure (Drinks per day x 270)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>135</td>
<td>270</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>270</td>
<td>540</td>
</tr>
<tr>
<td>10</td>
<td>168</td>
<td>1350</td>
<td>2700</td>
</tr>
</tbody>
</table>