Fetal Alcohol Spectrum Disorders: Early Childhood Presentation and Developmental Trajectories

- The webinar will begin at (10:00 AM CST).
- There will be minimal audio before the webinar begins.
- Please run the audio setup wizard to make sure your speakers work.
  - You will not need to test your microphone! (Skip microphone setup)
Fetal Alcohol Spectrum Disorders: Early Childhood Presentation and Developmental Trajectories

Kathleen Kastner, M.D.
Developmental and Behavioral Pediatrics Fellow
Department of Pediatrics
University of Chicago

Debbie Freke
Parent
Today’s Presenters

Kathleen Kastner, M.D.
Developmental and Behavioral Pediatrics Fellow
Department of Pediatrics
University of Chicago

Debbie Freke
Parent
Today’s Moderators

Maria Matticks
Consultant
Early Intervention Training Program, UIUC

Michaelene M. Ostrosky
Head and Goldstick Family Scholar,
Special Education, University of Illinois

Alissa Jones
Research Specialist
Early Intervention Training Program, UIUC
Survey & Certificate

This webinar has **ILLINOIS EI** credit as well as **ILLINOIS STATE LICENSURE*** credit

*OT, PT, SLP, SW, Nutrition/Dietitian

Look for “unique” email AFTER the webinar with the survey from Early Intervention Training Program (eittraining@illinois.edu)

If you joined as a group, each individual will need to complete the unique survey for credit
Chat

- Rollover the top or right side border to resize the chat box.
- Move the column

Type in this box—lower left side of screen
Who do we have participating with us today?

A. Parent/caregiver
B. Early Interventionist
C. CFC Staff
D. Administrators
E. Other (list in Chat Room)
Fetal Alcohol Spectrum Disorders: Early Childhood Presentation and Developmental Trajectories

Kathleen Kastner, M.D.
Developmental and Behavioral Pediatrics Fellow
Department of Pediatrics
University of Chicago

Debbie Freke
Parent
Prenatal Alcohol Exposure

1960s: Fetal alcohol syndrome was first described
- Prior to this, alcohol was seen as “innocuous” by some
- Even used as a treatment for some conditions associated with pregnancy

Numerous historical references to the dangers of alcohol consumption while pregnant

1981: Surgeon General Advisory

What percentage of pregnant women in the US report drinking alcohol in the previous month?

- 0.5%
- 2%
- 10%
- 35%
1 in 10 pregnant women reports alcohol use*

*Defined as at least one drink of any alcoholic beverage in the past 30 days.

Source: CDC Behavioral Risk Factor Surveillance System (BRFSS), United States, 2011–2013

http://www.cdc.gov/ncbddd/fasd/data.html
Alcohol use in pregnancy

Past Month Alcohol Use and Binge Alcohol Use among Pregnant Women Aged 15 to 44, Overall and by Trimester*: 2011 and 2012

- Any Alcohol Use
- Binge Alcohol Use

Percent

<table>
<thead>
<tr>
<th>Category</th>
<th>Any Alcohol Use</th>
<th>Binge Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Pregnant Women</td>
<td>8.5%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Women in First Trimester</td>
<td>17.9%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Women in Second Trimester</td>
<td>4.2%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Women in Third Trimester</td>
<td>3.7%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

* Pregnant women are defined as women aged 15 to 44 who reported that they were pregnant at the time of the survey interview. Pregnant women aged 15 to 44 not reporting trimester are excluded.

www.samhsa.gov/
U.S. Estimated New Cases in 2014

- SIDS
- Down Syndrome
- Cerebral Palsy
- FASD
- Autism

Source: CDC, SAMHSA
Drinking 1 glass of wine daily in the 3rd trimester is considered safe.

Yes - True
No - False
Timing Matters!

Figure 4.1. Critical Periods of Fetal Development

<table>
<thead>
<tr>
<th>PERIOD OF THE OVUM</th>
<th>PERIOD OF THE EMBRYO</th>
<th>PERIOD OF THE FETUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks 1-2</td>
<td>Week 3</td>
<td>Week 12</td>
</tr>
<tr>
<td>Period of early embryo development and implantation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- CNS (Central Nervous System) - Brain and Spinal Cord
- Heart
- Arms/Legs
- Eyes
- Teeth
- Palate
- External Genitals
- Ears

Prenatal Alcohol Exposure

- Physical
- Cognitive
- Behavioral
- Executive Function
- Emotional
- Adaptive
Scope of the Problem

Alcohol use during pregnancy can lead to lifelong effects.

Up to 1 in 20 US school children may have FASDs.

People with FASDs can experience a mix of the following problems:

Physical issues
- low birth weight and growth
- problems with heart, kidneys, and other organs
- damage to parts of the brain

Which leads to...

Behavioral and intellectual disabilities
- learning disabilities and low IQ
- hyperactivity
- difficulty with attention
- poor ability to communicate in social situations
- poor reasoning and judgment skills

These can lead to...

Lifelong issues with
- school and social skills
- living independently
- mental health
- substance use
- keeping a job
- trouble with the law

Drinking while pregnant costs the US $5.5 billion (2010).

Parent perspective- foster care/adoption
Brain Structures Most Sensitive to Prenatal Alcohol Exposure

<table>
<thead>
<tr>
<th>Brain Structure</th>
<th>Function</th>
<th>Prenatal alcohol exposure may result in problems with:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corpus Callosum</td>
<td>Communicates motor, sensory and cognitive information between the two hemispheres of the brain</td>
<td>Storing and retrieving information, problem solving, attention and verbal memory</td>
</tr>
<tr>
<td>Cerebellum</td>
<td>Processes input from other areas of the brain to coordinate motor and cognitive skills</td>
<td>Controlling movements, maintaining balance and fine motor skills</td>
</tr>
</tbody>
</table>

National Organization on Fetal Alcohol Syndrome (NOFAS)
1.800.66NOFAS or visit www.nofas.org
Central Nervous System Impact

- Neurogenesis
- Growth and Differentiation of Neurons
- Migration
- Synaptogenesis
- Apoptosis
- Plasticity
DIAGNOSIS
Fetal Alcohol Syndrome is diagnosed at the time of birth.

True or False?
Fetal Alcohol Spectrum Disorders

Umbrella Term describing several diagnoses:

- Fetal alcohol syndrome
- Partial fetal alcohol syndrome
- Alcohol-related birth defects
- Alcohol-related neurodevelopmental disorder
Fetal Alcohol Spectrum Disorders

- FAS (Fetal Alcohol Syndrome)
- pFAS (Partial Fetal Alcohol Syndrome)
- ARBD (Alcohol Related Birth Defects)
- ARND (Alcohol Related Neurodevelopmental Defects)

http://neafan.ca
### Fetal Alcohol Spectrum Disorders

<table>
<thead>
<tr>
<th>FAS with confirmed maternal exposure</th>
<th>FAS without confirmed maternal exposure</th>
<th>Partial FAS with confirmed exposure</th>
<th>Alcohol-related birth defects (ARBD)</th>
<th>Alcohol-related neurodevelopmental disorder (ARND)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OR</td>
<td>OR</td>
<td>OR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>A</strong> Confirmed Exposure to Alcohol</th>
<th><strong>B</strong> Facial Anomalies</th>
<th><strong>C</strong> Growth Retardation</th>
<th><strong>D</strong> CNS Abnormalities</th>
<th><strong>E</strong> Cognitive Abnormalities</th>
<th><strong>F</strong> Birth Defects</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Alcohol Glass" /></td>
<td><img src="image2" alt="Facial Anomalies" /></td>
<td><img src="image3" alt="Growth Retardation" /></td>
<td><img src="image4" alt="CNS Abnormalities" /></td>
<td><img src="image5" alt="Cognitive Abnormalities" /></td>
<td><img src="image6" alt="Birth Defects" /></td>
</tr>
</tbody>
</table>

---

Pediatrics. 2000;106:358-361
Fetal Alcohol Syndrome Criteria

**Facial Abnormalities**
- Smooth Philtrum
- Thin Vermillion Border
- Short Palpebral Fissures

**Growth Impairment**
- Prenatal or postnatal height or weight at or below the 10th percentile, documented at any one point in time (adjusted for age, sex, gestational age, and race or ethnicity)

**CNS Abnormalities**
- Structural
- Neurological
- Functional

***All 3 criteria categories must be present for diagnosis***

**Documented prenatal alcohol exposure is NOT needed to meet criteria**
FAS Facial Features

- Microcephaly
- Low nasal bridge
- Epicanthal folds
- Minor ear anomalies
- Micrognathia
- Small palpebral fissures
- Smooth philtrum
- Thin upper lip
Rating 4 or 5 meets criteria for FAS
Palpebral Fissure Length

- Caliper measurement
- Computer aided measurement
- Measurement at or below the 10th percentile
Palpebral Fissure Length

Canadian palpebral fissure length growth charts reflect a good fit for two school and FASD clinic-based U.S. populations.

Astley et al. 2011
# Palpebral Fissure Length (PFL) Z-score Calculator

Instructions: Enter data in yellow cells. All remaining cells will automatically compute.

<table>
<thead>
<tr>
<th>Patient birth date (mm/dd/yyyy)</th>
<th>Date PFL Measured (mm/dd/yyyy)</th>
<th>Patient's age (years)</th>
<th>Patient's PFL (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 1990</td>
<td>January 1, 2000</td>
<td>10.00</td>
<td>28.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PFL Normal Growth Chart</th>
<th>Applicable Age Range</th>
<th>Mean PFL for Normal Population (mm)</th>
<th>Patient's PFL Z-score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian Male or Female (Hall, 1969)</td>
<td>0-16 yrs</td>
<td>28.69</td>
<td>-0.51</td>
</tr>
<tr>
<td>Canadian Female (Clarron et al., 2010)</td>
<td>6-16 yrs</td>
<td>26.03</td>
<td>1.55</td>
</tr>
<tr>
<td>Canadian Male (Clarron et al., 2010)</td>
<td>6-16 yrs</td>
<td>26.49</td>
<td>1.07</td>
</tr>
<tr>
<td>Scandinavian Female (Stromland et al., 1999)</td>
<td>0-16 yrs</td>
<td>26.84</td>
<td>0.88</td>
</tr>
<tr>
<td>Scandinavian Male (Stromland et al., 1999)</td>
<td>0-16 yrs</td>
<td>27.43</td>
<td>0.42</td>
</tr>
</tbody>
</table>

* The PFL z-score reflects how many standard deviations (SDs) the patient's PFL is above or below the normal population mean. For example, if a 1-year-old child had a PFL = 20 mm, that child's PFL would be 1.27 SDs below the population mean on the Stromland male PFL charts.

*The University of Washington uses the Stromland PFL charts for Caucasians ([click here to learn why](#)).

---

Astley et al, University of Washington
CNS Abnormalities

**Structural**
Head circumference (occipital-frontal circumference – OFC) at or below the 10th percentile adjusted for age and sex. Clinically significant brain abnormalities observable through imaging.

**Neurologic**
Neurologic problems not due to a postnatal insult or fever, or other soft neurologic signs outside normal limits.

**Functional**
Performance substantially below that expected for an individual’s age, schooling, or circumstances.
CNS Functional Abnormalities

Global

- cognitive or intellectual deficits representing multiple domains of deficit (or significant developmental delay in younger children) with performance below the third percentile (2 standard deviations below the mean for standardized testing).

Functional

- deficits below the 16th percentile (1 standard deviation below the mean for standardized testing) in at least 3 domains
Partial Fetal Alcohol Syndrome

<table>
<thead>
<tr>
<th></th>
<th>A Confirmed Exposure to Alcohol</th>
<th>B Facial Anomalies</th>
<th>C Growth Retardation</th>
<th>D CNS Abnormalities</th>
<th>E Cognitive Abnormalities</th>
<th>F Birth Defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAS with confirmed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maternal exposure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAS without confirmed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maternal exposure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partial FAS with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>confirmed exposure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol-related</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>birth defects (ARBD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol-related</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>neurodevelopmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disorder (ARND)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OR OR OR
### Alcohol Related Birth Defects

<table>
<thead>
<tr>
<th></th>
<th>A Confirmed Exposure to Alcohol</th>
<th>B Facial Anomalies</th>
<th>C Growth Retardation</th>
<th>D CNS Abnormalities</th>
<th>E Cognitive Abnormalities</th>
<th>F Birth Defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAS with confirmed maternal exposure</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>White</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>FAS without confirmed maternal exposure</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>White</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>Partial FAS with confirmed exposure</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>White</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>Alcohol-related birth defects (ARBD)</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>White</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>Alcohol-related neurodevelopmental disorder (ARND)*</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>White</td>
<td>White</td>
<td>Black</td>
</tr>
</tbody>
</table>

*OR* denotes presence of defects.

---

Pediatrics. 2000;106:358-361
Alcohol Related Neurodevelopmental Disabilities (ARND)

<table>
<thead>
<tr>
<th>Confirmed Exposure to Alcohol</th>
<th>Facial Anomalies</th>
<th>Growth Retardation</th>
<th>CNS Abnormalities</th>
<th>Cognitive Abnormalities</th>
<th>Birth Defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
</tbody>
</table>

- FAS with confirmed maternal exposure
- FAS without confirmed maternal exposure
- Partial FAS with confirmed exposure
- Alcohol-related birth defects (ARBD)‡
- Alcohol-related neurodevelopmental disorder (ARND)‡

OR OR OR
# ARND Diagnostic Criteria

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth</strong></td>
<td>Normal to deficient</td>
<td></td>
<td>No growth deficiency</td>
<td>No growth deficiency</td>
<td>No growth deficiency</td>
</tr>
<tr>
<td></td>
<td>(Growth Ranks 1-4)</td>
<td></td>
<td>(Growth Rank 1)</td>
<td>(Growth Rank 1)</td>
<td>(Growth Rank 1)</td>
</tr>
<tr>
<td><strong>Face</strong></td>
<td>No more than 1 of the following:</td>
<td>--</td>
<td>No FAS facial phenotype</td>
<td>No FAS facial phenotype</td>
<td>Presumably no components of the pattern of FAS characteristic facial anomalies.</td>
</tr>
<tr>
<td></td>
<td>PFL ≤ 3rd percentile</td>
<td></td>
<td>(Face Rank 1)</td>
<td>(Face Rank 1)</td>
<td>(Face Rank 1)</td>
</tr>
<tr>
<td></td>
<td>Philtrum Rank 4 or 5</td>
<td></td>
<td>(Face Rank 1)</td>
<td>(Face Rank 1)</td>
<td>(Face Rank 1)</td>
</tr>
<tr>
<td></td>
<td>Lip Rank 4 or 5</td>
<td></td>
<td>(Face Rank 1)</td>
<td>(Face Rank 1)</td>
<td>(Face Rank 1)</td>
</tr>
<tr>
<td></td>
<td>(Face Ranks 1-2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CNS</strong></td>
<td>Criteria for “Static Encephalopathy”</td>
<td>--</td>
<td>At least 3 of the following Structure/Neurological/Functional domains with significant impairment:</td>
<td>At least 1 of the following:</td>
<td>At least 1 of the following:</td>
</tr>
<tr>
<td></td>
<td>At least 1 of the following:</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Structural/Neurological:</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(e.g., OFC ≤ 3rd percentile, abnormal structure, seizure disorder, hard signs)</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Severe Dysfunction:</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(3 or more domains(^b) of function with impairment 2 or more SDs below the mean)</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(CNS Rank 3 and/or 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Criteria for “Neurobehavioural Disorder”</td>
<td>--</td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>No Structural/Neurological abnormalities.</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Moderate Dysfunction:</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(1-2 domains(^b) of function with impairment 1.5 SDs below the mean)</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(CNS Rank 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CNS Ranks 3-4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CNS Ranks 1-4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CNS Ranks 2-4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Additional Criteria</strong></td>
<td>The term ARND is not used.</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>The following terms are used in lieu of ARND:</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Static Encephalopathy (Severe dysfunction)</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Neurobehavioural Disorder (Moderate dysfunction)</td>
<td></td>
<td>--</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
<td>Confirmed</td>
<td></td>
<td>Confirmed</td>
<td>Confirmed-excessive</td>
<td>Confirmed-excessive</td>
</tr>
<tr>
<td></td>
<td>(Alcohol Ranks 3 or 4)</td>
<td></td>
<td>(Alcohol Ranks 3 or 4)</td>
<td>(Alcohol Rank 4)</td>
<td>(Alcohol Rank 4)</td>
</tr>
</tbody>
</table>
ND-PAE

- Neurobehavioral Disorder Associated with Prenatal Alcohol Exposure
- DSM-5
- Published in 2013
Differential Diagnosis

- Genetic Syndromes (Williams, Noonan, 22q, Trisomy 21)
- Other teratogen exposures (Toluene, Valproate)
- ADHD (co-morbidity)
- Trauma (co-morbidity)
- Autism Spectrum Disorder (co-morbidity)
Parent perspective- Diagnostic journey
NEUROBEHAVIORAL OUTCOMES
Prenatal Alcohol Exposure

- Physical
- Adaptive
- Cognitive
- Emotional
- Behavioral
- Executive Function
EARLY CHILDHOOD SYMPTOMS
Infancy

- Sleep
- State regulation
- Autonomic regulation
- Increased activity levels
- Increased stress response
- Habituation
- Developmental delays
Toddlers

- Behavioral concerns
- Executive function
- Memory impairment
- Sensory processing
- Emotional regulation
- Developmental delays
  - Visual motor integration
  - Math skills
  - Speech delay

www.goodtoknow.co.uk
Parent perspective- Early childhood symptoms
CHILDHOOD AND ADOLESCENCE
Cognitive Outcomes

About 68% of people fall in this range within 15 points of 100

About 95% of people fall in this range within 30 points of 100

Less than 2% of people fall in this range

Less than 2% of people fall in this range

Wechsler intelligence score
Executive Function

Executive Functions
(work together in various combinations)

1. Activation
   - Organizing, prioritizing, and activating to work

2. Focus
   - Focusing, sustaining, and shifting attention to task

3. Effort
   - Regulating alertness, sustaining effort, and processing speed

4. Emotion
   - Managing frustration and modulating emotions

5. Memory
   - Utilizing working memory and accessing recall

6. Action
   - Monitoring and self-regulating action

Brown, T.E.
Executive Function

1. Activation
   - Impaired attention

2. Focus
   - Cognitive planning & Difficulties with abstract reasoning

3. Effort
   - Processing speed

4. Emotion
   - Set shifting

5. Memory
   - Deficiencies in memory and problem solving

6. Action
   - Difficulty with impulse control

- Time
- Money
- Honesty
- Figures of speech/sarcasm
ADHD and FASD

ADHD is the most commonly reported mental health diagnosis in FASD

FASD/ADHD is different than ADHD alone:

• Earlier presentation
• Primarily inattentive symptoms
• Worse adaptive function
• Improved response to Mixed amphetamine vs. Methylphenidate (some evidence)
Adaptive Function

• Daily living skills
• Communication
• Social difficulties
  • Facial emotional recognition
  • Understanding of social cues
  • FASD vs. ASD

http://blog.tdsbusiness.com
FASD vs. ASD

**Figure 5** Difficulties with peer interactions. Note higher percentages indicate a higher proportion of abnormality.
## Primary & Secondary Disability

<table>
<thead>
<tr>
<th>Primary Disability</th>
<th>Secondary Disability</th>
<th>Possible Reason for Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory problems</td>
<td>Lying</td>
<td>Making things up to fill in the blanks</td>
</tr>
<tr>
<td>Failure to understand ownership</td>
<td>Stealing</td>
<td>Attempt to buy friends</td>
</tr>
<tr>
<td>Little understanding of value of objects</td>
<td>Destructive behavior</td>
<td>Anger and frustration</td>
</tr>
<tr>
<td>Slow cognitive or auditory pace</td>
<td>Defiance</td>
<td>Avoidance as a result of frequent failure, inability to process instructions</td>
</tr>
</tbody>
</table>
Life Span

Prevalence of Secondary Disabilities Across the Life Span

http://fasdcenter.samhsa.gov/images/courses/fasdcourse/age12_LGE.jpg
Parent perspective- Childhood and adolescent symptoms
Fetal Alcohol Spectrum Disorders cannot be treated.

True or False?
INTERVENTION
Management

Aspects of Management

- Therapy
- Behavioral support
- Parent Training & Support
- Medication
- Educational Supports
# FASD Specific Interventions

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math Interactive Learning Experience</strong>&lt;br&gt;(<strong>MILE</strong>)</td>
<td>The MILE program demonstrates the effectiveness of adaptive materials and tutoring methods to improve math knowledge and skills in children with FASDs.</td>
</tr>
<tr>
<td><strong>Good Buddies</strong></td>
<td>Good Buddies is a group program for children with FASDs and their parents shown to improve peer interactions, social skills, and parent understanding of FASD-related disabilities.</td>
</tr>
<tr>
<td><strong>Parents and Children Together</strong>&lt;br&gt;(<strong>PACT</strong>)</td>
<td>PACT is a group program designed to improve behavior regulation skills, executive functioning, and parent effectiveness.</td>
</tr>
<tr>
<td><strong>Families Moving Forward</strong>&lt;br&gt;(<strong>FMF</strong>)</td>
<td>The FMF program is a positive parenting intervention designed to help families raising children between 4 and 12 years old who have behavior problem and FASD (or were heavily alcohol exposed). The FMF program model is a behavioral consultation intervention that combines a positive behavior support approach with motivational interviewing and other scientifically validated treatment techniques.</td>
</tr>
<tr>
<td><strong>Language to Literacy Program</strong></td>
<td>This classroom-based program provides instruction to improve receptive and expressive language skills as well as early literacy skills.</td>
</tr>
<tr>
<td><strong>USFA Kids</strong></td>
<td>This is a computer-based program that teaches and reinforces basic safety skills.</td>
</tr>
</tbody>
</table>
Parent perspective- Management and Support
Resources

SAFA: Self-Advocates with FASD in Action
Alcohol-related disabilities are completely preventable!

Neurocognitive and behavioral problems from prenatal alcohol exposure are lifelong

Early recognition, diagnosis, and therapy for any condition along the FASD continuum can result in improved outcomes

During pregnancy:

- No amount of alcohol intake should be considered safe
- There is no safe time in pregnancy to drink alcohol
- All forms of alcohol pose similar risk
- Binge drinking poses dose-related risks to the developing fetus
References


Astley et al, [www.fasdpn.org](http://www.fasdpn.org)

"Fetal Alcohol Spectrum Disorders Program.” American Academy of Pediatrics. 2015, [www.aap.org](http://www.aap.org)


Thank you for your participation!
Survey & Certificate

You will receive email with survey from Early Intervention Training Program (eitraining@illinois.edu)

Must complete unique survey to get certificate

Certificate will be emailed after survey completion (within 24 hours)

Issues with survey or certificate, please contact us at eitraining@illinois.edu
Thank you for supporting the children and families of Illinois!

Let’s Keep in Touch!

Visit our Website
EITP.education.illinois.edu

Follow us on Twitter
@EITPIllinois

Join Our Facebook Group
Early Intervention Training Program at The University of Illinois

The Early Intervention Training Program at the University of Illinois

The Children’s Research Center

51 Gerty Drive, Room 105

Champaign, IL 61820