Fetal Alcohol Spectrum Disorders

What are fetal alcohol spectrum disorders (FASD)?

FASD is a term used to describe a group of disorders that occur in children who were exposed to alcohol during pregnancy and have resulting life long disabilities. FASD itself is not a diagnosis but there are several diagnoses that fall under FASD including fetal alcohol syndrome (FAS), fetal alcohol effects (FAE) or partial FAS, alcohol related neurodevelopmental disorder (ARND) and alcohol related birth defects (ARBD).

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Description</th>
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<tbody>
<tr>
<td>Fetal alcohol syndrome (FAS)</td>
<td>A combination of physical and neurodevelopmental symptoms including pre and post natal growth retardation, microcephaly, facial abnormalities: short palpebral fissures, smooth philtrum, thin upper lip, short upturned nose, low nasal bridge, flat mid face, small chin, poorly formed low set ears, and central nervous system damage with resulting behavioral and cognitive problems.</td>
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<tr>
<td>Fetal alcohol effects (FAE) or partial FAS</td>
<td>Behavioral and cognitive problems without the facial characteristics of FAS. The use of this terminology in diagnosis is often confusing and the use of ARND or ARBD is increasingly preferred.</td>
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<tr>
<td>Alcohol related neurodevelopmental disorder (ARND)</td>
<td>Central nervous system damage with resulting cognitive and behavioral problems without the growth retardation or facial characteristics of FAS.</td>
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<tr>
<td>Alcohol related birth defects (ARBD)</td>
<td>Physical abnormalities of the eyes, ears, lungs, liver, heart, limbs, skeleton, and dentition related to in utero alcohol exposure. Hearing and vision along with visual and auditory processing may be affected.</td>
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What are the causes of FASDs?

All FASDs are caused by exposure to alcohol during pregnancy. Alcohol readily crosses the placenta and enters the blood stream of the fetus where it effects the development of brain cells, brain structures, organs and other body systems. There is a relationship between the amount of alcohol exposure and the timing during pregnancy on the effects on the child. Studies have shown that alcohol exposure between the 10th and 20th week of conception appear to cause the most symptoms. However, the amount of alcohol that
causes certain types of symptoms or the severity of those symptoms varies widely and is
dependent on individual factors in the mother and the child. Some children can be
affected by a relatively small exposure and others have very little effect from larger
doses. Therefore, there is no known safe level of alcohol consumption during any part of
pregnancy. (See Effects of Alcohol on a Fetus at

How many children have FASDs?
FASDs are a leading cause of developmental disabilities with an incidence as much as
twice the rate of Down syndrome. The US Department of Health and Human Services
reports that although there have been many efforts to inform women about the dangers of
alcohol consumption during pregnancy, 12% of women still drink while pregnant and 1
in 8 babies are exposed to alcohol in utero each year and are at risk for an FASD.

Estimates are that one percent or over 40,000 babies in the United States are born each
year with an FASD. The incidence for each separate diagnosis under the FASD umbrella
is not known and estimates vary. According to the Center for Disease Control and
Prevention, estimates of FAS vary from 0.2 to 1.5 in 1,000 live births. The incidence of
FAS, ARND and ARBD combined is three times the rate of FAS alone.

Children from low income, ethnic minorities have higher rates of FASDs. Hispanic,
Asian and white populations all have similar rates of FASDs. Native Americans have the
highest rates followed by African Americans. Regional differences in rates of FASDs in
Native American populations exist and there is wide tribal diversity across North
America. The estimate in 1999 for the rate of FASDs in Alaska was 16 per 1,000 live
births. Estimates in the 1980’s among Native American populations ranged from 29.9 in
10,000 live births to 39 to 333 per 10,000 live births in Southwestern Native American
tribes.

Effects of alcohol on development
Alcohol exposure can permanently impact the development of most of the body systems
including the central nervous system, face, sensory systems, organs and bones. The
effect on the central nervous system and sensory systems include problems with thinking,
learning, behavior, social skills, daily living activities and the ability to work and live
independently. The effects of FASDs in young children include

Cognition and learning problems
• intellectual disability
• learning disabilities
• inattention
• memory problems
• reasoning and judgment
difficulties
• mathematical difficulties
• difficulties with concepts of
time-space and cause-and-effect
• speech and language delays
• sensory processing disorders
Physical development problems
  • growth retardation
  • facial abnormalities
  • organ abnormalities (lung, heart, liver)
  • limb reductions

Behavior and social-emotional problems
  • delays and disabilities in adaptive and daily living skills
  • hyperactivity
  • poor impulse control
  • dental problems
  • vision and hearing problems
  • sleep disturbances
  • motor skill delays
  • behavior disorders
  • poor social skills
  • anxiety and depression

Importance of Early intervention and FASDs

Early intervention providers should be aware that studies indicate that early intervention services can minimize the negative effects of FASDs. Early intervention is most effective in reducing secondary disabilities in the areas of mental health, social development, behavior, motor and adaptive or independent daily living skills. Children who have received early intervention services and supports have shown fewer problems with attention, learning, and language development.

Further, teaching strategies that focus on structured routines with simple instructions and incorporate hands-on learning experiences with repetition are helpful for children with FASDs who have difficulty with receiving, storing and using new information.

An understanding of the life long disabilities an FASD can cause is important for planning early intervention and preschool programming. *Not a Single Drop* from the Ohio Resource Network for Safe & Drug Free Schools & Communities provides a helpful breakdown of life stages, what problems and concerns to expect and recommendations to approach services and supports for families who have children with an FASD ([http://www.notasingledrop.org/fasd/what-is-fasd/fact-sheets/fasd-overview](http://www.notasingledrop.org/fasd/what-is-fasd/fact-sheets/fasd-overview)).
<table>
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<th>Age</th>
<th>Problems and Concerns</th>
<th>Recommendations</th>
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</table>
| **Infancy & Early Childhood (0-5)** | • Sleep disturbances  
• Poor sucking responses  
• Failure to thrive  
• Delays in developmental milestones  
• Delayed toilet training  
• Difficulty following directions  
• Difficulty regulating moods & emotions  
• Temper tantrums  
• Distractibility and hyperactivity  
• Poor adaptation to sensory stimuli | • Early identification/ intervention with birth and/or foster/adoptive parents  
• Education of parents regarding physical and psychosocial needs of an infant or child affected by FASD  
• Careful monitoring of physical, social and emotional development and health  
• Safe, stable and structured home  
• Assignment of a service coordinator  
• Appropriate preschool or educational environment  
• Respite care for caretakers |
| **Latency Period (6-11)**    | • Easily influenced and difficulty predicting and/or understanding consequences  
• Give an appearance of capability without actual abilities  
• Difficulty separating fact from fantasy  
• Temper tantrums, lying, stealing, disobedience and defiance of authority  
• Delayed physical and cognitive development  
• Poor comprehension of social rules and expectations | • Safe, stable and structured home  
• Careful and continued monitoring of health issues and existing problems  
• Appropriate educational environment with regular assessments  
• Establish expectations and goals for future  
• Support group  
• Use of clear, concrete and immediate consequences for behavior  
• Respite care for caretakers  
• Service coordinator or advocate role expands to include liaison between parents, school, health care providers, and social service agents. |
| **Adolescence (12-17)**      | • Lying, stealing and passivity in responding to requests  
• Faulty logic  
• Egocentric: difficulty comprehending and/or responding appropriately to other people’s feelings, needs and desires  
• Low motivation and self esteem, depression  
• Academic ceiling which is usually around grade 4 for reading and grade 3 for Spelling and Math  
• Pregnancy or fathering a child  
• Consider transition to supervised or independent | • Education of caregivers and adolescents regarding sexual development, birth control options and protection from sexually transmitted diseases  
• Planning and implementation of transition to appropriate educational, adult residential or vocational training  
• Mental health services and supports as needed  
• Respite care for caretakers  
• Support group  
• Safe, stable and structured home or residential placement  
• Careful monitoring of social activities and structuring of leisure time  
• Working towards increased independence with appropriate instruction in making |
## References


National Center for Continuing Education: Fetal Alcohol Syndrome [http://www.nursece.com/onlinecourses/9012.html](http://www.nursece.com/onlinecourses/9012.html)


### Resources

Fetal Alcohol Spectrum Disorders Center
http://www.fascenter.samhsa.gov/index.cfm

FAS Diagnostic and Prevention Network
http://depts.washington.edu/fasdpn/index.htm

FASD Competency-Based Curriculum Development Guide for Medical and Allied Health Education and Practice
http://www.cdc.gov/ncbddd/fasd/curriculum/index.htm

National Organization on Fetal Alcohol Syndrome
http://www.nofas.org/

Native Initiative
http://fascenter.samhsa.gov/nativeinitiative/index.cfm

Not a Single Drop
http://www.notasingledrop.org/fasd/what-is-fasd/fact-sheets/fasd-overview

Substance Abuse and Mental Health Services Administration’s (SAMHSA) FASD Center for Excellence
http://fascenter.samhsa.gov/

State of Alaska Office of Fetal Alcohol Syndrome
http://hss.state.ak.us/fas/