



## Fetal Alcohol Syndrome (FAS)

Sharon Davis, Ph.D. and Leigh Ann Davis, MSSW, MPA  
The Arc of the United States

### What is FAS?

FAS refers to a group of physical, behavioral, and cognitive abnormalities that can occur to unborn babies when pregnant women drink alcohol and pass the alcohol along to their unborn babies through the blood stream. FAS is identified by abnormal facial features, central nervous system problems and a slowness of growth. FAS can cause physical and mental disabilities of varying levels of severity (including mental retardation). Alcohol-related neurodevelopmental disorder (ARND) is also caused by prenatal alcohol use. Children with ARND do not have full FAS, but may demonstrate learning and behavioral problems. Another term commonly used to describe children affected by prenatal alcohol use who do not have all the symptoms of FAS is fetal alcohol effects (FAE).

The prevalence of FAS is not known. CDC (Centers for Disease Control & Prevention) studies have documented FAS prevalence rates ranging from 2 to 15 cases per 10,000 live births. Other prenatal alcohol-related conditions, such as ARND, are believed to occur approximately 3 times as often as FAS.

Children with FAS or ARND can have serious lifelong disabilities other than mental retardation, such as learning disabilities and serious behavioral problems. The good news is FAS is not hereditary and only occurs if a woman drinks alcohol during her pregnancy. In other words, **FAS and ARND are 100% preventable** (Centers for Disease Control and Prevention).

### How does alcohol affect the unborn child?

Alcohol in the mother's blood passes through the placenta and enters the embryo or fetus through the umbilical cord. Through a number of biological means, alcohol affects the size, shape, and function of the cells that form the brain, the heart, the kidneys, and all other body organs and systems. Effects of these organs and systems can occur as a result of drinking any time during pregnancy.

### Is there a safe amount of alcohol a pregnant woman can drink?

No. There is no absolute safe amount of alcohol that a woman can drink during pregnancy. Risk of FAS and ARND increase as the amount of alcohol consumed increases. Risks are highest for women who binge drink (5 or more

### Quick Facts

**Condition:** Fetal Alcohol Syndrome (FAS)

**Link to mental retardation:** Approximately 25% of people with FAS also have mental retardation.

**Who It Affects:** Children of some women who drink alcohol during pregnancy.

**Symptoms:** Growth retardation, facial abnormalities, central nervous system dysfunction, behavioral problems, hyperactivity, learning disabilities, low IQ and other possible abnormalities.

**Incidence:** Not known. Some studies show a range from 2 to 15 cases per 10,000 live births. ARND may occur approximately three times as often.

**Cause:** Drinking alcohol during pregnancy. FAS is not hereditary. FAS is 100% preventable by not drinking during pregnancy.

**Treatment:** There is no cure for FAS. However, early intervention, individualized education programs, transition supports from school to adult life, intensive service coordination and one-on-one counseling can help improve the lives of FAS-affected individuals.

**Contact for more information:**

National Organization on Fetal Alcohol Syndrome

202-785-4585 or [www.nofas.org](http://www.nofas.org)

Centers for Disease Control & Prevention

[www.cdc.gov/ncbddd/fas](http://www.cdc.gov/ncbddd/fas)

The Arc of the United States

301-565-3842 or [www.thearc.org](http://www.thearc.org)

drinks on one drinking occasion). The best option is not to drink any alcohol if you are pregnant.

It is also important to refrain from drinking if planning a pregnancy, since many women do not realize or find out they are pregnant until the first or second month into their pregnancies. However, if a pregnant woman is drinking during pregnancy, it is never too late for her to stop. The sooner a woman quits drinking, the better it will be for both her and her baby. Even if a woman is not planning a pregnancy, if she is sexually active and not using contraception effectively, she should limit alcohol consumption as there is a risk she could be pregnant and not know it.

### Is it safe to drink beer or wine coolers?

No. All drinks that contain alcohol pose a potential threat to the unborn baby. A standard 12 ounce can of beer has the same amount of alcohol as a 4 ounce glass of wine or a 1 ounce shot of straight liquor. Some alcoholic drinks, such as malt beverages, wine coolers, and mixed drinks often contain more alcohol than a 12 ounce can of beer.

## Can a father's drinking cause FAS?

No, a father's drinking cannot cause FAS. However, his role is important in helping the woman refrain from drinking during pregnancy. He can encourage her abstinence by avoiding social situations where drinking is the focus and by abstaining himself.

## How is FAS diagnosed?

FAS is diagnosed by 4 criteria:

1. Growth deficiency in height and/or weight either prenatally or postnatally.
2. Specific pattern of facial anomalies: short eye slits, smooth or indistinct philtrum (the ridges running vertically between the nose and lips) and a thin upper lip.
3. Some brain damage to the central nervous system demonstrated through microcephaly (small size of the brain), tremors, hyperactivity, fine or gross motor problems, attentional deficits, learning disabilities, intellectual impairments and possible mental retardation.
4. Evidence of alcohol use by the birth mother during pregnancy (however, some diagnoses are made without this criteria) (Streissguth, 1997).

## Who is most often affected by FAS?

FAS occurs in all types of homes and families in the U.S. The incidence of FAS is higher among certain tribes of Native Americans and Alaska natives. Also, it is not uncommon for adoptive parents to discover their adopted child has FAS. A recent survey of children with FAS evaluated at a pediatric clinic found 35 percent were living in adoptive families (Blackston, 2002).

## Do all people with FAS have mental retardation?

No, not everyone with FAS has mental retardation, although FAS is the leading known preventable cause of mental retardation. Approximately 25 percent of people with FAS and 10 percent of people with ARND have IQ scores of 70 or below which is in the range of those with mental retardation (Streissguth, 1997). Even if a child with FAS does not have mental retardation, the child often has learning disabilities that interfere with sound judgment and can cause behavioral problems that significantly impact his or her life.

## What treatment is recommended for individuals with FAS?

There is no cure for this condition and it does not appear to get better with age. The damage of FAS caused by a mother's drinking during pregnancy is permanent. However, with early identification and diagnosis, children with FAS can receive services that can help maximize their potential. They will benefit from early intervention services and an individualized education program in school that includes preparation for transition from school to work and possible further education.

Many people with FAS benefit from one-on-one counseling support. In addition, they often require intensive

service coordination if they do not have someone who can coordinate the many services they need (such as on-going individual therapy, job coaching, housing, and transportation).

## How can secondary conditions be prevented in children with FAS?

Secondary conditions (conditions that occur due to having FAS) often occur later in life, such as inability to live independently or hold down a job, mental health problems, drug/alcohol addictions, failure to develop appropriate sexual behavior and consequent legal problems. Once FAS is diagnosed in a child, secondary conditions can be reduced and in some cases prevented altogether.

Children are protected from developing secondary conditions if they are diagnosed before age 6, live in a stable and nurturing home, never experience violence against themselves, stay in each living situation at least 2.8 years, experience a good quality home from 8 to 12 years of age, apply for and are eligible for developmental disabilities services, have a diagnosis of FAS rather than ARND and have their basic needs met (Streissguth, 1997).

## What services are available to families of children with FAS?

There are programs offering income assistance, health care and related services, education, help with basic needs such as food programs and social services and child welfare services. Specific services may include Head Start, early intervention, special education, and vocational services.

The National Organization on Fetal Alcohol Syndrome (See "Quick Facts" box) can direct families to support groups and medical personnel who may be able to provide diagnosis and treatment to affected children. Some chapters of The Arc conduct support groups that assist families with children who have FAS. To find a chapter near you, visit our web site at [www.TheArc.org](http://www.TheArc.org)

## Where can I obtain more information?

For more information on FAS related resources in your area, contact your local or state chapter of The Arc or refer to the web site of the National Organization on Fetal Alcohol Syndrome at [www.nofas.org](http://www.nofas.org). Information on FAS is also available on the web site of CDC's National Center on Birth Defects and Developmental Disabilities: <http://www.cdc.gov/ncbddd/fas>.

## References

Blackston, D. (2002). Dymorphological analysis of Fetal Alcohol Syndrome (FAS): A report of 300 cases receiving multidisciplinary evaluation. Presentation at annual meeting of American Association on Mental Retardation, Orlando, FL.

Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities, Fetal Alcohol Syndrome Prevention Team.

Streissguth, A. (1997). *Fetal Alcohol Syndrome: A guide for communities and families*. Baltimore: Paul Brookes Publishing

This fact sheet was supported by Cooperative Agreement Number V84/CCV320261 from the Centers for Disease Control and Prevention, Department of Health and Human Services. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.