

PROFESSIONAL REVIEW

This professional review is designed for educators. It is meant to be a refresher course about Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE). Information changes often as researchers learn more about these conditions. This review is an attempt to give you the most accurate and up-to-date information possible.

The problem

FAS/FAE is a problem found in all races and all socio-economic groups. In the United States, between 1,200 and 8,800 infants are born with FAS every year. However, because it is hard to diagnose these conditions, exact numbers have not been determined.

FAS is hard to diagnose for several reasons.

1. No one symptom alone can identify FAS.
2. There are no widely accepted medical tests to diagnose FAS.
3. Some behavioral and mental problems may not develop until a child is older.
4. It is hard to get a good assessment of the mother's alcohol use.
5. Many health care providers are unfamiliar with and untrained in the issues of alcohol use among pregnant women.

At least one out of every five pregnant women uses alcohol and/or drugs, even though no safe amount of alcohol has been set for a pregnant woman. One standard drink is defined as one 12-ounce bottle of beer, one 5-ounce glass of wine, or one 1.5-ounce shot of liquor. Even one drink a day has not been determined safe.

The damage alcohol does can depend on how much, as well as when, during the pregnancy the mother drinks. Drinking *at any time* during pregnancy can cause birth defects.

Important! Binge drinking can be just as harmful to an unborn infant as a small amount of alcohol every day. For women, binge drinking is defined as having four or more drinks in a row. Even one instance of binge drinking can be very harmful to an unborn infant.

Alcohol is a teratogen that causes cell death. This cell death can result in various levels of brain damage and/or birth defects. Whenever a woman stops drinking, she lowers the risk of having an infant with FAS/FAE.

FAS/FAE

FAS is a birth defect that affects growth, the brain, and the face. It is characterized by behavior problems, learning disabilities, pre- and post-natal growth retardation, and specific facial abnormalities. *It is the leading cause of preventable mental disabilities.*

FAS does *not* refer to an infant born drunk or addicted to alcohol. However, some infants with FAS have withdrawal symptoms.

Fetal Alcohol Effects (FAE) is a term that is widely used to describe children who have some symptoms of FAS, but do not meet the full criteria for FAS.

There are no defined criteria for FAE. It is not a defined diagnosis, even though the symptoms are just as debilitating for children who have FAE. Often, a child with FAE will have mental and behavioral symptoms but no physical symptoms.

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Alcohol's effects

FAS was first defined in 1973. A group of doctors coined the term to describe certain birth defects found in children born to alcoholic women. FAS is not hereditary, because the birth defects are not genetically linked. They are caused by the mother's alcohol use.

When a woman drinks while pregnant, the fetus is exposed to the same amount of alcohol she drinks, and for a longer period of time. Alcohol passes from the mother's bloodstream to the fetus through the placenta. The alcohol runs through the fetus's bloodstream, out into the amniotic fluid that surrounds it, and is taken in a second time.

A fetus cannot process alcohol. It must depend on the mother to rid the alcohol from its system. As the mother's body does this, alcohol is absorbed by the fetus's tissue that has high water content (the brain, liver, pancreas, kidney, lungs, thymus and heart).

The level of alcohol in the fetus's blood is often two times higher than in the mother's blood.

Developing organs are at greatest risk for damage from alcohol during the first trimester. An increased risk of spontaneous abortion occurs in the second trimester. Drinking during the third trimester can interfere with the infant's growth, including growth of the brain.

Drinking by the father may also affect a pregnancy. Alcohol enters the man's testicles through the blood and lowers his sperm count. It lowers sperm's ability to swim, and affects the process by which sperm are selected to fertilize the egg.

Heavy alcohol use as a teen may *permanently* change the DNA in a man's sperm. This means that even if he is not a heavy drinker when he is older and fathers a child, his damaged sperm can still cause a miscarriage.

Heavy alcohol use by the man can also be linked to infertility, low birth weight and long-term, permanent damage to the child.

Characteristics

Symptoms of FAS can include mental retardation, slowed growth, central nervous system damage, head and facial abnormalities and behavioral abnormalities. It is important to note that these symptoms may appear in many children who do not have FAS.

The first area is slowed physical growth before and after birth. Children with FAS are often smaller than normal when they are born. They gain weight at about 33 percent of the normal rate. They are often very slender although they eat well.

Children with FAS may have certain physical defects, most of which occur in the face and head. These include short eye openings, drooping eyelids, and a crescent-shaped fold of skin over the inner corner of the eye (this is normal in some ethnicities). Other symptoms are a low nose bridge, flattened midface (area between eyes and mouth), flat, smooth philtrum, thin upper lip, and small head.

Problems with joints and limbs may also occur. Fingers may curve sideways toward the middle finger, joints may be abnormally spaced, or a child may be unable to straighten a finger at one or more joints.

Finally, mental and behavioral problems affect children with FAS all their lives. Children and adults with FAS are often mildly to severely mentally disabled.

FAS infants have poor sucking responses, feeding problems, and uneven sleeping and eating patterns. They are often cranky, easily distracted, and very sensitive.

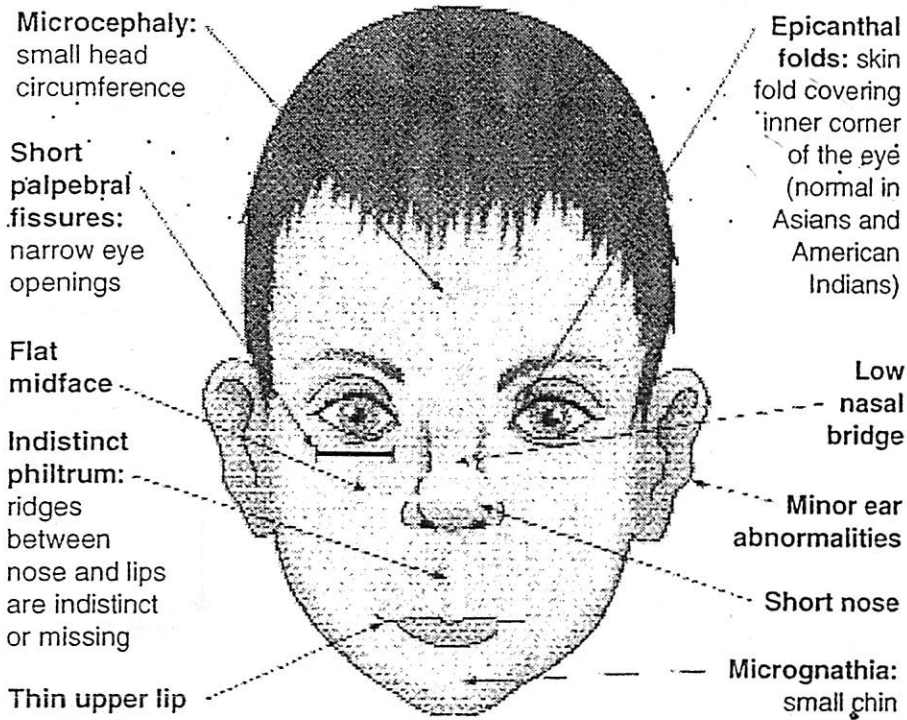
Young children have a short attention span, poor short-term memory, delays in walking and talking, low IQ, and are often hyperactive.

Healthy infant



Severe case of FAS





Note: These facial defects of Fetal Alcohol Syndrome are shown in the FAS Manikin. Also shown is one of the possible joint defects; the fingers on the Manikin's hands are abnormally spaced. A gap appears between the middle and ring fingers. This is just one of the many joint defects that may occur in a child with FAS.

Older children have poor social skills, bad judgement, temper tantrums, and repeated instances of lying, stealing, and disobeying. Many are unable to think abstractly (about money, time, etc.), separate fact from fantasy, and lack problem solving skills.

While the physical symptoms often lessen or disappear with age, people with FAS carry the mental and behavioral problems with them into adulthood. Adults with FAS are often seen as too talkative, impulsive, hungry for attention, are unable to think ahead, can't understand danger, and act inappropriately for someone their age in social settings.

Children with FAE do not have all the symptoms required to be diagnosed with FAS. They may not have *physical* symptoms.

However, most do suffer from many of the same *mental* and *behavioral* problems that are seen in FAS children.

Even if a person has some of these symptoms, it does not mean that his or her mother drank alcohol while pregnant. A diagnosis of FAS must be made by a medical professional. Many factors must be present, one of which should be a determination of the extent of the mother's alcohol use.

Terminology

Alcohol-Related Birth Defects (ARBD) - describes a range of physical problems in children whose mothers drank during pregnancy; includes anomalies such as heart defects, sight/hearing problems, joint anomalies, etc.

Fetal Alcohol Syndrome (FAS) - FAS is a birth defect that affects growth, the brain, and the face. It is characterized by behavior problems, learning disabilities, pre/post-natal growth retardation, and specific facial abnormalities.

Fetal Alcohol Effects (FAE) - describes children who have some symptoms of FAS, but do not meet the full criteria for FAS.

Philtrum - Vertical groove that runs from under the nose to the upper lip.

Teratogen - an agent that causes physical or developmental defects in the fetus. Alcohol, cigarettes, and drugs are examples of teratogens.



