



## Fetal Alcohol Syndrome

### **What is Fetal Alcohol Syndrome (FAS)?**

Fetal Alcohol Syndrome (FAS) describes changes in a baby born to a mother with alcohol exposure during pregnancy. A broader term is Fetal Alcohol Spectrum Disorder (FASD), which describes any physical or developmental disorders caused by prenatal alcohol exposure. The changes depend on the amount, frequency and the timing of the consumption of alcohol by the mother during pregnancy. The first three months of pregnancy is the time in which vital organs like the heart and the kidney are developing. Drinking alcoholic beverages in that time period can be especially harmful.

In 2015, the American Academy of Pediatrics (AAP) stated that consuming alcohol at any time during pregnancy causes increased risk of physical and neurocognitive developmental disorders in a child, and that no amount of alcohol is safe to consume during pregnancy.

### **What causes the changes in the fetus?**

The alcohol in the blood of the mother moves to the blood of the fetus. Because the ability of the fetus to get rid of alcohol is much less than the mother, alcohol concentration in the blood of the fetus becomes much higher than that of the mother. Alcohol interferes with the ability of the fetus to use oxygen and develop normally, and permanent brain damage could occur.

### **What are the eye findings in FAS and FASD?**

#### **Eyelid abnormalities:**

- Short palpebral fissures (eyelid openings) \*this is the most common feature
- Epicanthal folds (larger than normal fold of skin near the inner corner of the eye)
- Telecanthus (large distance between inner corners of the eyes)
- Blepharoptosis (droopy eyelids)

#### **Anterior Segment (front part of the eye) abnormalities:**

- Cornea and Anterior Chamber can be affected
- Lens: cataract formation

#### **Posterior Segment (inside back of the eye) abnormalities:**

- Optic Nerve: alcohol exposure affects the development of the optic nerves. A small or hypoplastic nerve can cause decreased visual acuity that cannot be corrected.

- Retinal Vessel Tortuosity: this has unknown visual significance

### **Eye movement disorder:**

- [Nystagmus](#) - or shaking of the eyes- this can also cause decreased vision
- [Strabismus](#): misalignment of the eyes
- Refractive disorders: need for glasses
- [Amblyopia](#): when one eye doesn't see as well as the other.

### **What other physical changes and developmental disorders occur in FAS?**

The upper lip may be thin and the area between the nose and upper lip- called the philtrum- may be wide and flat- without the normal vertical curves. [See figure 1]. Abnormalities of the heart and skeletal system have also been reported.

Growth and developmental delays, behavioral problems, learning disabilities and neurocognitive disorders affecting IQ (measure of intelligence) can occur in association with FAS and FASD.

The effects of FAS extend beyond childhood. The changes caused by prenatal alcohol exposure can cause lifelong disabilities.



**Fig. 1:** Example of physical changes that can occur in FAS.

### **How common is FAS?**

The estimated incidence of FAS and FASD is 6-9 cases and 24-48 cases per 1,000 births, respectively. That's up to 5% of all births in the U.S. Some experts believe this to be an underestimate, and that there are even more children with undiagnosed FAS and FASD. (AAP 2015)



FAS is the leading preventable cause of birth defects and intellectual and neurodevelopmental disabilities. (AAP 2015)

### **How are the eye problems in FAS treated?**

Strabismus, amblyopia, and the need for glasses ([refractive error](#)) can be treated. Some eye conditions, such as strabismus, may require surgery. Impairment of visual acuity caused by optic nerve hypoplasia cannot be treated. However, the pediatric ophthalmologist can help the family and school personnel optimize the child's learning experience.

### **Is there anything that can be done to prevent FAS?**

Yes. Since there is no known "safe" amount of alcohol that can be consumed during pregnancy, the recommendation is to abstain. The U.S. Surgeon General has given the following advice about alcohol use during pregnancy:

- A pregnant woman should not drink alcohol.
- A woman who is trying to get pregnant should not drink alcohol because she will not know that she is pregnant for the first few weeks of the pregnancy.
- A pregnant woman who has already used alcohol during her pregnancy should stop right away.
- Because nearly half of all pregnancies in the United States are unplanned, women of childbearing age should talk with their doctor about how to prevent an alcohol-exposed pregnancy.

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