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Focus on...

WHAT IS FETAL ALCOHOL SYNDROME?

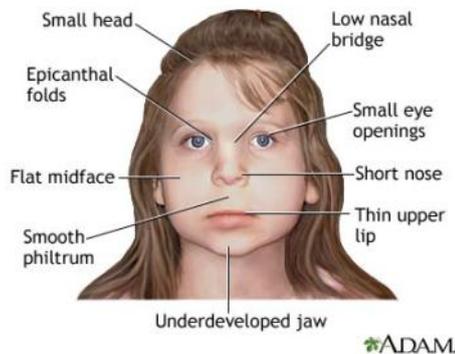
Fetal Alcohol Syndrome (FAS) is a birth defect caused by heavy alcohol consumption (usually in a binge pattern) during pregnancy. It is characterised by growth retardation, facial and neural abnormalities as well as malformations of other organ systems. Maternal risk for giving birth to a child with FAS is known to vary substantially by population and that the risk also varies between individuals.

Alcohol and its primary metabolite, acetaldehyde, are known tissue toxins which may interfere directly with cellular growth and metabolism. When a pregnant woman consumes alcohol, it is carried to all her organs and tissues including the placenta. The placenta functions to protect the fetus and provides nourishment from the mother to the fetus. Alcohol is able to cross the placental membrane and is then transported directly to all developing tissues of the fetus. These adverse effects of alcohol on the developing fetus are characterised by an array of disorders, termed Fetal Alcohol Spectrum Disorders (FASD). They include structural anomalies as well as behavioural and neuro-cognitive disabilities. Children at the severe end of the spectrum are defined as having the fetal alcohol syndrome (FAS).

The following 3 categories are the clinical signs present in a FAS-affected child:

A. Growth retardation

- ◆ Height and weight for age are below the 10th percentile on the NCHS standard curves for height and weight, i.e. the child is underweight and/or short of stature,
- ◆ Head circumference for age is below the 10th percentile on the NCHS standard curves for head circumference, and
- ◆ Failure to thrive (i.e. the child does not grow adequately and weight gain is sub-optimal)



B. Facial and other physical abnormalities

- ◆ Eyes – small and wide-set eyes with epicanthic folds,
- ◆ Ears – small and low-set,
- ◆ Nose – short, upturned with a flat philtrum (i.e. no groove on the area between the nose and upper lip) and a low nasal bridge,
- ◆ Mouth – thin upper lip, cleft lip or cleft palate,
- ◆ Chin – small and recessed,
- ◆ Skeletal – limited joint movement, and
- ◆ Kidney and heart defects may also occur.

C. Brain and nervous system abnormalities

- ◆ Mild to moderate mental retardation,
- ◆ Delay in developmental milestones (i.e. poor sucking, delayed sitting, crawling, walking and talking),
- ◆ Poor eye-hand co-ordination (e.g. catching a ball),
- ◆ Delayed development of fine motor co-ordination (e.g. picking up an item with his/her fingers) and gross motor co-ordination (e.g. running), and
- ◆ Irritability and hyperactivity.

PREVALENCE

In South Africa, FAS related research has been limited to a few at-risk areas. The experience in the Western Cape is that FAS is a common diagnosis and a known cause of mental retardation in the Mixed Ancestry population. In the last decade, 1 in 10 refer-

Foetal Alcohol Syndrome (FAS)

PERMANENT BRAIN DAMAGE

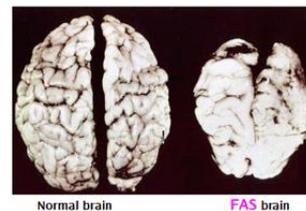


Photo courtesy of Dr. Sterling Clamen

This is what FASfacts strives to PREVENT

als to genetics clinics in the Western Cape yielded a FAS diagnosis. The Foundation for Alcohol Related Research (FARR) has reported a steady increase in the prevalence of FAS in school-entry children in the Wellington area of the Western Cape. Prevalence rates in 1997 of 4.8%, increased to 7.6% in 1999 and most recent reports from 2001, indicate an alarming prevalence of FAS at 8.8%, in this population. Other studies in Gauteng have reported a prevalence of 2.2% in Soweto, 1.2% in Lenasia and 3.7% in West-bury. Recent research by FARR in De Aar in the Northern Cape revealed a prevalence of 10.2% in this area.

The estimates of FAS prevalence elsewhere in the world range from 0.1-0.2% in developed countries, to 1% in some Native American Indian populations. Thus, the prevalence of FAS in certain areas of South Africa, is the highest reported anywhere in the world. Current data indicates that nearly 1 million adults and children in South Africa are affected by the advanced mental or physical FAS defects. Studies indicate that in high-risk areas, children living in rural areas are at higher risk than urban children.

HOW CAN FAS BE PREVENTED?

The exact amount of alcohol consumption permitted before FAS occurs is not known at this point, since each woman and each pregnancy is unique. Prenatal damage by alcohol varies widely and is dependant on the quantity of alcohol consumed, the frequency of consumption and the timing of consumption in relation to the gestational age of the fetus. Additionally, there are a number of variables, such as age, genetic factors, multiple drug use and the nutritional status of the mother, which may interact with alcohol in the development of FAS. The safe answer to the question therefore is that women planning to conceive or who are pregnant should abstain from alcohol, completely.

Most women with unplanned pregnancies are unaware that they are pregnant during the first 12 weeks of pregnancy, and can unknowingly damage their fetus by consuming alcohol. The best advice to such mothers is to stop drinking as soon as they realise that they are pregnant. This will greatly reduce the risk of damage to the fetus. The best method of prevention, however, is to plan pregnancies with effective birth control and to abstain from any alcohol when planning a pregnancy.

WHAT ARE THE LONG-TERM CONSEQUENCES OF FAS?

It is important to realise that a child made vulnerable by his/her mother's alcohol consumption during pregnancy, has a biologically based disability with potential long-term adverse consequences. For instance, the brain and nerve abnormalities found in children with FAS often manifest as hyperactivity, irritability, attention deficit disorder, distractibility and taking longer than normal to complete tasks. These functional impairments in the infant/child make the adequate feeding of such infants/children challenging. Furthermore, physical problems, such as cleft palate, may impair feeding and need to be surgically corrected. Weak sucking leads to very long feeding sessions, which frustrate parents and increase anxiety. Additionally, these infants are also easily distracted and may be unable to focus on drinking or eating thus increasing feeding times even more. Adolescents with FAS have been reported to overeat, a behaviour, which may well, be due to abnormalities of the satiety centre in the brain. FAS-affected adolescents are mostly of short stature (due to earlier failure to thrive) and as such they may be prone to developing obesity and its consequences.