

## **Raising awareness of primary and secondary disabilities resulting from prenatal alcohol use.**

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### **Abstract**

*It is now well recognized both from clinical and epidemiological studies that exposure to alcohol during pregnancy can produce harmful effects on the foetus and that the extent of the damage done is related to the time of exposure and dose of alcohol ingested. Australia held its first National Foetal Alcohol Syndrome Workshop in May 2002 to bring together an expert advisory committee to examine the issues in Australia. This paper will address some of the educational, health, financial and social implications of prenatal exposure to alcohol and of caring for children, young people and adults with resultant primary and secondary disabilities. The process of identifying and diagnosing children with the foetal alcohol syndrome and disabilities stemming from prenatal alcohol consumption will be briefly discussed.*

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It has been recognized for almost thirty years, from a vast body of evidence, that alcohol is teratogen (Jones and Smith, 1973). Alcohol is now the leading teratogenic agent in long lasting central nervous system dysfunction and is a major cause of mental retardation (Spohr, Willms & Steinhausen, 1994, p.19, 1995). Alcohol consumed in pregnancy results in primary and secondary disabilities which are preventable (Warren & Bast, 1988) and which persist into adulthood (Hawks, 1993).

Maternal alcohol consumption may result in offspring having the foetal alcohol syndrome (FAS) or foetal alcohol effects (FAE). A plethora of alternative definitions has been suggested by various researchers (Astley & Clarren, 2000; Barr & Streissguth, 2001; Moore et al., 2002). These include Fetal Alcohol Spectrum Disorders (FASD), partial FAS (PFAS), alcohol related birth defects (ARBD) and alcohol related neurodevelopmental disorder (ARND). The Institute of Medicine (Abel, 1996) has described five categories of FAS to

allow for cases where maternal alcohol exposure may not have been confirmed. In addition a four digit diagnostic code developed by Anstly & Clarren (2000) and reported by O'Leary (2002) enables objective measurement scales and quantitative data to be obtained for specific FAS cases. For the purpose of this paper the author will continue to use FAS and FAE for simplicity. In general terms FAS is diagnosed when a child has prenatal or postnatal growth retardation (height and weight below the 10th percentile), central nervous system dysfunction and craniofacial abnormalities and there is confirmed maternal alcohol exposure. Some children with FAS or FAE fit the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders- Fourth Edition, APA, 1994) diagnostic criteria for attention deficit-hyperactivity disorder (ADHD). The diagnoses of conduct disorder or oppositional defiant disorder may also apply in later childhood and in the early teen years (Carmichael & Olsen, 1994, p.14). The risk of attention deficit disorder (ADD) has been found to be twice as high and the diagnosis of conduct disorder twenty five times higher when both mother and father are alcoholic than when only the father is alcoholic (Streissguth, 1991, p. 5). The risks for ADD when only the mother is alcoholic are not available (ibid).

LaDue, Streissguth and Randels (1992) have described the growth deficiencies typical of FAS as being of prenatal onset with no "catch up" postnatally. The facial features commonly seen include short eye slits, a low, flattened nasal bridge, epicanthic folds, wide-set eyes, a flat mid face, an indistinct philtrum, microcephaly, a thin upper lip and a small chin. Other abnormalities noted include congenital eye defects such as ptosis (drooping eyelids), strabismus (crossed eyes), and myopia (near sightedness), minor ear anomalies, hearing disorders and posteriorly rotated ears, cleft palate and dental malformations. Joint and limb anomalies, altered creases of the palm, extra digits, genital abnormalities and increased risk for spina bifida and heart defects have also been observed. Central nervous system deficits in FAS children include small brain size, brain malformations, delayed development, mental retardation, tremor and hyperactivity. These birth defects related to alcohol use are permanent (McGinley, 1996).

The findings of Burgess and Streissguth (1992, p.25) suggest that the average IQ of students with FAS is approximately 65 to 70 with a range between 30 and 105. The IQ Range for FAE has been estimated to be similar to FAS with a slightly higher average. Measured on the Wechsler Intelligence Scales, ninety five percent (95%) of FAS/FAE adolescents and adults have a lower verbal than performance IQ regardless of socioeconomic status (Streissguth, 1994). LaDue et al. (1992) found that thirty three percent (33%) of their sample of ninety three FAS/FAE teenagers with a mean age of 18.4 years, had a performance IQ minus verbal

IQ discrepancy of twenty points or more. Such a discrepancy is usually a measure of central nervous system dysfunction. The verbal subtests require more memory and abstract thinking than the performance subtests and it is these two skills that are poor in people affected by prenatal alcohol. Students with FAS or FAE are likely to be found in all types of educational settings and may fall along a spectrum from normally competent to severely disabled. They are thus of concern to special education personnel as well as the normal classroom teacher.

Preliminary results (2001) from the Australian Paediatric Surveillance Unit, in Western Australia, the first prospective national study, indicate an incidence of 0.005 to 0.008 per 1000 children under 15 years and a birth prevalence of 0.02 per 1000 per annum (O'Leary, 2002). Data from the Birth Defects Register and Rural Paediatric Service database in Western Australia, indicate a prevalence of 0.02 per 1000 for non-indigenous West Australians and 2.76 per 1000 for indigenous West Australians. There has been little research in Australia since the recommendations of the Australian College of Paediatrics proposed the education of the public about the dangers of consuming alcohol in pregnancy and the labelling of beverages warning the public about the potential damage to the developing foetus (Tudehope, 1989). The initial document on alcohol and pregnancy, was prepared for the Standing Committee on Perinatal Medicine by Dr. Fiona Stanley, as early as 1982 (Tindle, 1991).

The prevalence rate for the FAS varies from country to country and amongst groups (Phillipson, 1988; Hawks, 1993). It has been reported in people of all racial identities (Streissguth, 1994, p.45). Early studies in U.S.A. suggested that it is one in about 700 live births in Seattle (Streissguth, Aase, Clarren, Randels, LaDue & Smith, 1991). On some American Indian reservations, minimal prevalence rates range from one in 97 to one in 750 live births. The highest reported prevalence rates are one in eight in a Canadian Indian village (Robinson, Conry & Conry, 1987) and similar findings in Western Cape Province, South Africa (May et al., 2000). The American National Institute for Alcoholism and Alcohol Abuse (1990) has estimated the incidence of FAS in USA to be one to three per thousand live births. Streissguth (1992) believes that most attempts at estimating prevalence are underestimates. It has been reported that ten percent of all school age children with mild mental retardation (IQ 55 to 70) born in Sweden during a two year period, were afflicted with alcohol related disabilities (Hagberg, Hagberg, Lewerth & Lindberg, 1981). The syndrome has been identified in Aboriginal populations in the Cape York region of Queensland (Hayes, 2001). Australian indigenous populations are said to have the highest recorded percentage of heavy drinkers worldwide (Lipson, 1994).

The incidence quoted for FAE in the United States is one in 300 to 350 live births. Burgess and Streissguth (1992, p. 25) believe that these statistics are probably very conservative in that they reflect only those children who have actually been identified, referred and diagnosed. The syndrome has until recently been diagnosed only by clinical observation and often is not recognized until after the child reaches school age. Most (89%) of cases in the United States are diagnosed after the age of 6 years. These are usually the most severely affected. Aronson (1998) estimates that 15 per 1000 live births in Russia are “alcohol related birth defects”. The incidence of FAE among heavily drinking women (over 10 drinks per occasion) in Russia is thought to be 170 children per 1,000 live births.

The social costs on the individual, the family and the community for this preventable condition are very high. Studies conducted in the nineties (Streissguth, Barr, Sampson & Bookstein, 1994, 1995; Streissguth, Barr, Kogan & Bookstein, 1996) suggest that even small amounts of alcohol consumed during pregnancy may have a deleterious effect on offspring. Streissguth et al. (1994, 1995, 1996) found that children of social drinkers had significant decrements in arithmetic ability and reading performance and an average seven point decrement in full scale IQ at age seven years. Deficits in spatial memory, verbal memory, flexible problem solving and perceptual motor function were also evident. Behaviours that were evident in the same children at age eleven were distractibility, restlessness, lack of persistence and reluctance to meet challenges. Learning problems included poorer information processing and problem reasoning. On national tests, arithmetic was the most affected by prenatal alcohol exposure. By age fourteen, arithmetic again correlated highly with prenatal alcohol exposure. Other deficits related to attention and memory scores and spatial learning. Stephens Cherpital's (1989) findings suggest that those who average more than one drink daily during pregnancy have significantly more likelihood of delivering infants with minor congenital abnormalities than lighter drinkers or abstainers. The results of a four year study of foetal alcohol affected people (Streissguth et al., 1996) found a range of secondary disabilities. Over ninety percent of the sample of 415 had a history of mental problems including depression, suicide threats and attempts, attention deficit disorders, panic attacks and psychotic episodes. A significant percentage had experienced disrupted schooling because of challenging and unacceptable behaviours. Between fifty and seventy-five percent of those over twelve years had a history of being in trouble with the law including a history of incarceration in prison or remand homes. Up to sixty-five percent of the sample from age six to adult had a history of inappropriate sexual behaviours. Between sixty-five and ninety-five percent had problems with employment and a high percentage

ended up with alcohol and drug problems themselves. These findings expand on the earlier research findings of LaDue et al. (1992), fifty eight percent of whose sample of adolescents and adults exhibited maladaptive behaviours.

One can argue that those affected by prenatal alcohol may be an emotional and financial burden to families, the educational system, health services and later, the criminal justice system (Fehr, 1995, p.33). Abnormalities of the early developmental period can be specific risk factors for disease, with associated health costs, in later life. Bloss (1994) has estimated the economic costs involved in supporting alcohol damaged offspring throughout their lifespan and concluded that efforts to prevent FAS and FAE will produce a net economic gain if costs that go into preventing the damage are less than what it costs to support each birth throughout the lifetime of the individual. Given that extra resources are needed in health, education, welfare, disability and pension payments and frequently in the penal system for foetal alcohol damaged people, prevention efforts can be justified on economic grounds.

Parents with a serious alcohol or drug problem, frequently are unable to parent their children adequately. This may be because of their own, the parents', disruptive and neglectful behaviour which may be sometimes compounded because of the type of challenging behaviour manifest in alcohol damaged children. Family services may intervene in the interests of the children and many will be placed in short or long term foster care. The clinical literature suggests that where a child has been diagnosed with an alcohol related birth defect, the risk of an older sibling being similarly affected is about 170 per thousand live births and the risk of a younger sibling being affected rises to about 770 per thousand live births (Abel, 1988, in Berg, Kinsey, Litke, Wheway, 1995, p. 7). The problem is, therefore, in families and can affect all children in that family unless there is a marked change in the alcohol consumption behaviour of the parents.

Recent figures for the percentage of Australian women who choose abstinence from alcohol consumption during pregnancy are unknown.

It is believed that approximately 30-50% of the children of women with alcohol problems will show evidence of being affected by their mother's alcohol use (Berg et al., 1995, p. 6). For this reason it is important to know the drug, including alcohol consumption, history of biological parents, especially the mother, when a child is being placed in foster care or is adopted. A mother's alcohol consumption should be part of a monthly prenatal

check up, however, many of these women have inadequate prenatal care, if any at all and an accurate "drinking history" is not available and difficult to obtain.

Children with FAS/FAE are at a higher than average risk for physical and sexual abuse and neglect when raised in their families of origin. Craft (2002) believes that these children need a supportive, loving home environment with clear guidelines. When foster or adoptive placement is necessary, parents need information about FAS in order to understand the implications of the diagnosis. Caregivers need support groups, extra financial assistance and regular respite care. The daily stress and demands generated by these children can trigger parental burnout.

Children with undiagnosed FAS or FAE may be put in the care of unsuspecting families. They have the potential to seriously disrupt those families, if they have been given no preparatory information about the disability of their fostered child. It is therefore essential to have as early a diagnosis as possible and for family services to have as thorough a drug and alcohol history of the biological parents as possible. It is believed that many children in the care of Family Services have been exposed to high or moderate levels of pre-natal alcohol. Where the history of maternal alcohol use during pregnancy is unknown, every effort should be made to obtain information from family, friends, court records and community agencies. Information on alcohol (and other drugs) consumption should be obtained prior to an assessment, to enable an accurate diagnosis to be made.

FAS/E is a lifelong invisible brain damage that manifests itself in characteristic behaviours. Without a diagnosis, it is difficult for caregivers, teachers and health care workers to provide suitable support and adequate intervention. Unfortunately FAS/E is often an invisible handicap because it is seldom identified at birth (rarely identified at all in Australia). Most children look "normal". If the child is very bright, early development appears normal. At first the behaviours are seen as appealing such as chattiness, "over friendliness" and preference for adult company. Problems with the child's behaviour are often blamed on inadequate or poor parenting. Their superficial verbal skills may fool a carer into thinking that they are more competent and brighter than they are. Developmental timelines for a FAS person are abnormal. Early outgoing behaviour and apparent sociability of FAS or FAE people, mask major problems with attachment and interpersonal social rules. They find difficulty with abstract and conceptual thoughts and ideas may not understand the concept of time or money. In school they may be diagnosed with emotional and behavioural disorders and their underlying disability missed. Their

“challenging” behaviour may be diagnosed as ADHD and is not usually recognised as the disability of FAS or FAE.

FAS/E is not developmental delay. The children will not "catch up". As Streissguth (1994, p.57) emphasises FAS is a lifetime disability. It will not “go away” when children grow up. In fact the problems usually increase and become more obvious and significant with age especially as the child approaches puberty. Problems with behaviour are neurological as a result of brain damage not necessarily emotional or environmental. Challenging behaviours are the result of damage to the brain. Children will function more successfully if they have:

- A correct diagnosis
- Educational programmes that meet their specific needs
- Caregivers, teachers and health workers who are familiar with FAS/E
- Caretakers, teachers and health workers who use consistent appropriate interventions.
- Caretakers who will intervene and advocate on their behalf.
- A stable, structured living situation over an extended period.

To determine if a child has the disability of FAS or FAE it may be necessary to follow guidelines:

1. Determine if there was significant foetal exposure to alcohol by applying the Maternal alcohol use history questionnaire (Wegmann, Colfax, Gray & Reed, 1995). If the birth mother is unavailable, collect appropriate anecdotal material from relatives.
2. A case manager or referral agent needs to compile appropriate behavioural information by interviewing one or more family members or caretakers and complete the Checklist of significant cognitive signs (Wegmann et al., 1995).
3. Relevant psycho-educational assessment data needs to be collected. This may be available or requested from the school or obtained through private testing by a registered educational and developmental psychologist. The assessment needs to include the administration of a WISC (Wechsler Intelligence Scale for Children, if under 16) or WAIS-R (Wechsler Adult Intelligence Scale-Revised, if over 16), or equivalent, a WRAT-R (Wide Range Achievement Test- Revised) and other social adjustment or mental status tests such as the Vineland.

4. An appointment for a diagnostic examination with an appropriate medical practitioner or paediatrician trained in the assessment of FAS/FAE needs to be arranged.
5. A folder of materials related to the client's development can be collated, such as:
  - A copy of the Maternal alcohol use history or anecdotal information of alcohol use.
  - A summary of behavioural, cognitive and psychological indicators
  - Relevant information about the client's medical and educational records such as height and growth records, dental, heart or joint abnormalities, hearing speech or language disorders, learning difficulties, psycho-educational test results and early years photographs.
6. Counselling and intervention services can be arranged or refer the client to an appropriate professional knowledgeable about FAS/FAE.

With the challenging behaviours that FAS and FAE children can display, parents can become "burnt out", experiencing mental and physical exhaustion. Foster, adoptive or biological parents need the social support of extended family, friends and government agencies to help them cope. They also need to work with those who understand the behavioural and educational manifestations of their children's disabilities.

In this paper I have outlined some basic information about alcohol related birth disabilities and have briefly examined the specific problems related to the care of children with primary and secondary disabilities caused by prenatal exposure to alcohol. I have also attempted to give some guidelines on how to obtain assessment where suspected brain damage by alcohol consumption in pregnancy may have occurred. Australia is in its infancy in dealing with this major social issue and data are still needed for the Australian context. Finally, the paper has briefly touched on the importance of the role of caregivers and the need for understanding and support for them in the carrying out of their valuable role in the community.

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