

Alcohol Consumption and FASD

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The revised Canadian diagnostic guideline, *Fetal Alcohol Spectrum Disorder (FASD): a guideline for diagnosis across the lifespan*, now recommends FASD as a diagnostic term.¹ A diagnosis of FASD is made when two sets of criteria are met for either *FASD with Sentinel Facial Features* or *FASD without Sentinel Facial Features*. The guideline also includes the designation, *At Risk for Neurodevelopmental Disorder and FASD, Associated with Prenatal Alcohol Exposure*. This is not a diagnosis, but a designation, given to individuals who do not meet the criteria for a FASD diagnosis.

Fetal Alcohol Syndrome (FAS) was first defined in 1973 by Smith and Jones.² They introduced this term because Dr. David Smith believed that FAS was preventable. However, it is now understood that FASD prevention is complex and requires changes that range from political interventions that impact social determinants of women and children's health to changes in culture and beliefs.³

Alcohol is a psychoactive drug that can alter mood and behaviour, and misuse can lead to dependency. According to the Public Health Report, Alcohol Consumption in Canada, social consumption of alcohol is reported by 80% of Canadians and 50% of young men and women (aged 18 to 24 years) engage in risky drinking on a monthly basis. Rates of binge drinking in women 15 years of age increased to 56% in 2013 from 44% in 2004.⁴

An estimated 20% of all female drinkers and 30% of all male drinkers report engaging in risky alcohol consumption on at least a monthly basis. A significant increase in monthly and/or risky drinking was reported for women between 2003 and 2010. Girls and women between 15 years to 34 years are engaging in increasingly riskier alcohol consumption behaviours.

Risky Drinking is defined as:¹⁵

- More than 15 standard drinks a week or more than 3 drinks a day for men
- More than 10 standard drinks a week or more than 2 drinks a day for women on most days increases the risk for long-term negative impacts on health.
- Drinking more than 4 standard drinks for men or 3 for women in an occasion increases the risks for short-term injury and harm.

Estimates of the average rates in 2015 of risky drinking among Canadians ages 15 years and older who drank rose from 16.7% to 38.6% for short-term harm and from 6.8% to 27.3% for long-term harm. Most underage drinking and drinking by young adults occurs in episodic heavy

drinking occasions (i.e. exceeding the short-term guidelines) rather than low level of drinking over several days.

Fifty percent of pregnancies are unplanned and 40 to 60% of women are unaware of their pregnancy until they are several weeks. Alcohol disinhibition can lead to increased risky behaviours such as sexual experimentation. FASD affects 2 to 5% of the population in western countries. In Canada, approximately 3000 babies are born every year with FASD, translating to 330,000 individuals in Canada with FASD. Adverse neurobehavioural effects have been observed in individuals where their mothers drank 7 to 28 drinks a week, or a single binge, defined as 4 drinks per occasion.^{12,13} Despite the knowledge of alcohol consumption and its effect on the fetus, more than 10% of women drink alcohol during pregnancy.⁴

Women who use alcohol during pregnancy do so for different reasons. For many, alcohol helps them cope with the trauma they have suffered, particularly if they have a history of physical and/or sexual abuse, victimization or have experienced trauma and stress. They are often a member of a household who uses alcohol and substances. Women from low socio economic status often face homelessness, poverty, food insecurity and mental health challenges. These factors compromise their ability to access prenatal care, health care and other supports.⁵

These factors make prevention a challenge and underscore the importance of education and awareness to reduce the number of babies prenatally alcohol exposed. Prenatal screening, with validated tools and brief intervention where indicated, show evidence of reducing alcohol consumption during pregnancy.³

Prenatal alcohol teratogenicity has been well described. The mechanisms involved occur at many levels, including neurochemical, neurocellular and anatomical. The threshold of alcohol needed to cause neurodevelopmental dysfunction has been difficult to define, due to the multiple mediating and contributing effects, such as differences in body size, race, genetics; and environmental factors.⁶

In addition, brain dysfunction due to prenatal alcohol exposure (PAE) can occur at any time during the pregnancy, making it difficult to define a single threshold. Though the high risk period is between 2 to 12 weeks, when the embryo/fetus is developing and the differentiation and formation of various organs is occurring, the risk to the central nervous system continues until the 3rd trimester.⁷

PAE leads to brain dysfunction that manifests as deficits in cognition, executive function, memory, language, mathematics, social functioning, attention and adaptive functioning. The effects on the brain are often complex and vary among individuals, making it difficult to define a specific neurobehavioural profile of FASD.^{8,9,10} These individuals are at risk for victimization, mental health issues, addictions, unemployment, homelessness, poverty and negative interactions with the law.^{11,12}

The literature for PAE and its effects on the fetus are difficult to interpret due to the variations in design and methodology. The measures of “unit of alcohol” vary from country to country and study to study, as do the definitions of binge drinking, and drinking per occasion. Most studies rely on perspective data from mothers who drank during pregnancy.¹ This information is fraught with inaccuracy, due to issues with recall and each individual’s definition of “a drink”. Fear of

intervention by social services might influence mothers to under-report the amounts of alcohol they consumed or deny any alcohol use during pregnancy. The fear of being judged, the stigma of drinking during pregnancy and guilt make obtaining an accurate PAE history challenging.

In an effort to mitigate the effects of prenatal alcohol exposure on the developing fetus, many countries are recommending low risk drinking in childbearing years., When planning a pregnancy, healthy lifestyle choices are recommended, including abstention from alcohol when planning and throughout the pregnancy to optimize outcomes for the fetus.

Discontinuing alcohol use is recommended as soon as pregnancy is discovered. If quitting alcohol consumption is not possible due to various circumstances, attempts should be made and supported to decrease alcohol intake as much as possible.

Recommendations:

Follow Canada's Low-Risk Alcohol Drinking Guidelines^{6,15}

- To reduce risks of *short-term* injury and harm:
 - Women should have no more than 3 standard drinks on any single occasion.
 - Men should have no more than 4 standard drinks on any single occasion.
- To reduce *long-term* health risks:
 - Women should have no more than 10 standard drinks a week, with no more than 2 drinks a day on most days.
 - Men should have no more than 15 standard drinks a week, with no more than 3 drinks a day on most days.

The safest choice is to AVOID consumption of alcohol when planning and at any time during pregnancy.

Frontline workers, who have received appropriate training, should be encouraged to screen for alcohol consumption in all pregnant and post-partum women using validated tools.

Patients who receive a positive screen and are at high risk should receive immediate brief intervention, including ongoing support and referrals to appropriate interventions

Postpartum women are also advised to limit alcohol consumption while breastfeeding and to plan their breastfeeding schedule if they choose to drink alcohol. Information and advice regarding lactation and alcohol consumption has been inconsistent, but research in animals and humans indicates the potential negative impact of alcohol consumption while breast feeding.¹⁴

Dr. Hasmukhlal (Hasu) Rajani, Pediatrician, has been a core clinic member of the Lakeland Centre for FASD diagnostic team since 2000, as well as with the North West Central FASD Network and North East Alberta Network Assessment and Diagnostic clinics. He provides clinic training across the country, and mentors and educates Government Agencies and FASD Assessment and Diagnostic Clinics, provincially and nationally, through presentations that strengthen their ability to provide consistent supportive services.

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