

**Diagnosing Fetal Alcohol Spectrum Disorders (FASD) Three North American Frameworks
(Compiled by Mary K. Cunningham from sources listed below)**

Canadian Medical Association 2005	4-Digit Diagnostic Code Criteria for FASD 1999	Institute of Medicine (IOM) 1996
<p>Fetal Alcohol Syndrome – FAS A-Evidence of pre- or postnatal growth impairments B-Simultaneous presentation of all three facial features associated with FAS: i) thin upper lip ii) missing philtrum iii) shortened palpebral fissures C-Evidence of impairments in 3 of the following CNS domains. See* below. D-Confirmed (or unconfirmed) maternal alcohol exposure</p>	<p>Rank 4 Significant growth deficiency Severe facial dysmorphology, three facial features associated with FAS: a- thin upper lip b- missing philtrum c- shortened palpebral fissures Definite CNS damage/dysfunction High Risk – Confirmed maternal exposure to high levels of alcohol consumption</p>	<p>Fetal Alcohol Syndrome 1-FAS with confirmed maternal alcohol exposure – A- confirmed maternal drinking B- 1-4+ facial anomalies C- growth deficiencies D- evidence of at least one CNS developmental abnormality – small head size at birth, structural defects in brain, neurologic soft signs such as impaired fine motor skills, hearing loss, poor eye-hand co-ordination</p>
<p>Partial Fetal Alcohol Syndrome-pFAS A-Simultaneous presentation of any two of the three facial features associated with FAS: i)- thin upper lip ii)- missing philtrum iii)- shortened palpebral fissures B-Evidence of impairments in at least 3 of the following CNS domains. See* below. C-Confirmed maternal alcohol exposure</p>	<p>Rank 3 Moderate growth deficiency Moderate facial dysmorphology: 2 of the 3 facial features associated with FAS: a- thin upper lip b- missing philtrum c- shortened palpebral fissures Probable CNS damage/dysfunction Some Risk – Confirmed maternal exposure to alcohol use</p>	<p>2- FAS without confirmed maternal alcohol exposure B, C and D above</p>
<p>Alcohol-Related Neurodevelopmental Disorder (ARND) A-Evidence of impairments in at least 3 of the following CNS domains. See* below. B-Confirmed maternal alcohol exposure</p>	<p>Rank 2 Mild growth deficiency Mild facial dysmorphology, 1 of the 3 facial features associated with FAS: a – thin upper lip b- missing philtrum c- shortened palpebral fissures Possible CNS damage/dysfunction Unknown –Maternal exposure to high levels of alcohol consumption not confirmed</p>	<p>3- pFAS with confirmed maternal alcohol exposure A, B, C above plus D- evidence of CNS abnormalities OR E- evidence of a complex pattern of behaviour and cognitive abnormalities for developmental age that have no other family or medical explanation**</p>

<p>ARBD – The Canadian Medical Association (CMA) says the term alcohol-related birth defects (ARBD) should not be used as an umbrella or diagnostic term, for the spectrum of alcohol effects. ARBD constitutes a list of congenital anomalies, including malformations and dysplasias and should be used with caution. (See Table 1 in Reference 3 below – this is the IOM Diagnosis #4 in the last column to the right.)</p>	<p>Rank 1 No growth deficiency No facial dysmorphology: No facial features associated with FAS are present Unlikely CNS damage or dysfunction No Risk – Confirmed absence of alcohol exposure from conception to birth</p>	<p>Alcohol-related Effects History of maternal alcohol exposure – two diagnoses which may co-occur 4. ARBD –congenital anomalies frequently found in the following systems – heart, skeletal, kidneys, eye or ocular system, auditory system – these anomalies are thought to be caused by the teratogenic effects of alcohol <i>in utero</i>.</p>
<p>Static Encephalopathy – SE SE does not appear on any of these frameworks but it is an important concept. See notes below.</p>	<p>The person is evaluated and receives a “mark” of 1-4 in each of the 4 categories above. Scores range from 16 to 0 with 16 implying an absolute complete FASD profile. (A person receiving 0-4 would be unlikely to be referred for diagnosis.)</p>	<p>5- ARND – evidence of A &/or B A-CNS neurodevelopmental abnormalities as described above AND/OR B- evidence of a complex pattern of behaviour and cognitive abnormalities for developmental age that have no other family or medical explanation**</p>

* Evidence of impairments in at least 3 of the following CNS domains: hard and soft neurological signs (see IOM list); brain structure; cognition; communication; academic achievement; memory; executive functioning and abstract reasoning; attention deficit/hyperactivity; adaptive behaviour; social skills, social communication. (2005)

**** Pattern of Behaviour and Cognitive Abnormalities (IOM) (1996)**

These are the primary behaviours or attributes related to primary behaviour (secondary effects) commonly related to FASD. This list is from 1996 and has been expanded considerably since then: learning difficulties; deficits in school performance; poor impulse control; problems in social perception; deficits in higher level receptive and expressive language; poor capacity for abstraction and self-reflection; specific deficits in mathematical skills; or problems in memory, attention or judgement.

Chart Notes:

There are three different frameworks of diagnostic criteria for FASD in North America. Correlating this information may assist justice personnel to understand and evaluate written documentation and in testimony of an expert witness or with a diagnosis from a different jurisdiction. The preceding chart is NOT exhaustive or meant to be used for medical diagnosis.

FASD is an umbrella term for various diagnoses and not a diagnostic term in itself. Depending on where diagnosis takes place offenders could be diagnosed using any one of these three systems. The Canadian Medical Association diagnostic framework has a *proviso* that is missing in the other two frameworks: all CMA diagnoses are given only “after excluding other diagnoses”. (See Table 3 in Reference 1 below.) FASD diagnostics evolved from 1996 (US) to

2005 (CAN). The field of research in FASD diagnostics is expanding rapidly. Other biomarkers of FASD are emerging and are discussed on page S13 of Reference 1 below.

References:

- 1- Canadian Medical Association. (2005). *fetal alcohol spectrum disorder: Canadian guidelines for diagnosis*, CMAJ 2005; 172 (5suppl): S1-S21
- 2- Astley, S. J. & Clarren, S. (1999). *Diagnostic guide for fetal alcohol syndrome and related conditions: the 4-Digit Diagnostic Code*. 2nd ed. Seattle: University of Washington Publication Services.
- 3- Stratton *et al.* (1996). *Fetal alcohol syndrome: diagnosis, epidemiology, prevention, and treatment*. Washington: Institute of Medicine and National Academy Press.

Page 3 Diagnostic Criteria Chart List of Terms:

ARBD- Alcohol Related Birth Defects
ARND-Alcohol Related Neurodevelopmental Disorder
CNS- Central Nervous System
FASD – Fetal Alcohol Spectrum Disorder(s)
FAS- Fetal Alcohol Syndrome
pFAS- Partial Fetal Alcohol Syndrome
SE – Static Encephalopathy

Static Encephalopathy – SE

Static Encephalopathy (SE) does not yet appear on any of these frameworks.

Kathryn Page describes FASD diagnosis at the diagnostic clinic in San Jose in her 2002 paper “In our clinic the diagnosis is not a black-or-white decision – fetal alcohol syndrome or not – because we recognize that this is a whole spectrum of disorders occurring in varying severities, with or without physical markers and with varying degrees of certainty about the mother’s use of alcohol... more common in the patients we have seen is a diagnosis of static encephalopathy or neurobehavioural disorder; these refer to respectively, equivalent or more moderate brain damage (to FAS) without the physical markings indicative of FAS.” (Page, 2002:15)

She continues with, “the term *fetal alcohol spectrum disorders* comprises fetal alcohol syndrome (FAS) and what used to be called “fetal alcohol effects” (FAE)People with FAE have the nervous system damage and the prenatal history. Other (modern) terms for FAE are alcohol-related neurodevelopmental disorder (ARND); neurobehavioural disorder; alcohol exposed and static encephalopathy; alcohol exposed.” (Page, 2002: 22)