Thousands of children are born with Fetal Alcohol Spectrum Disorders (FASD), some with Fetal Alcohol Syndrome (FAS), many with Alcohol Related Neurodevelopmental Disorders (ARND), also called Fetal Alcohol Effects (FAE). Only 11% of children with FASD receive a diagnosis by age 6 (Streissguth 1996). Only 16% have an IQ below normal. Most deficits are invisible and difficult to detect.

Assessments recommended for infants and young children:
• Bayley Scales of Infant Development  
  (cognitive and motor evaluation, ages 0-2)  
• The Infant Mullen Scales of Early Learning  
  (communication skills.ages 0-4).  
• K-ABC (cognitive abilities, ages 3-5)
Assessments recommended for school age children:
- Vineland Adaptive Behavior Scales (functional abilities)
- WISC-III Wechsler children version (IQ)
- PIAT-R Peabody Individual Achievement Test-Revised (scholastic achievement)

Examples of tests of executive function that help to differentiate children who may have FASD from non-affected children and those with other developmental disabilities [Connor PD, Sampson PD, Bookstein FL, Barr HM, Streissguth AP. Direct and indirect effects of prenatal alcohol damage on executive function. *Dev Neuropsychol*. 2000;18: 331-54] include the following:
- WISC-III Mazes (to assess planning)
- Trail Making Test (to measure shifting of perceptual set)
- Consonant Trigrams (for evaluation of working memory)
- Wisconsin Card Sorting Test and Category Test (to assess reactive flexibility)

Assessments for adolescents and adults recommended by Robin LaDue:
- WRAT-3 Wide Range Achievement Test (IQ)
• Woodcock Johnson (IQ)
• WIAT Wechsler Individual Achievement Test (IQ)
• WAIS-R Wechsler adult version (IQ)
• ORC Test of Reading Comprehension
• FIRO-B (control, inclusion, affection)
• MMPI-2 and MMPI-A (addiction and personality)
• TAT Thematic Apperception Test (concrete responses to pictures)
• Rorschach (to observe presence of perseveration)
• Bender (measures visual motor abilities)
• AUI Alcohol Use Inventory (self-report substance abuse evaluation)

**Risk Assessment Questions:**
• Are there alcohol problems in family of origin?
• Was she/he raised by someone other than birth mother?
• Has she/he ever been in special education classes?
• Has she/he had different home placements?
• Has she/he ever been suspended from school?
• Has she/he ever been diagnosed as ADHD?
• Any childhood photos age 2 to 10?
• How many jobs has she/he had in past 2 years?
• Can she/he manage his own money well?
• Are her/his friends older or younger?

When should a referral for an evaluation be made for diagnosis of FASD?

The Centers for Disease Control and Prevention have recently published guidelines for identifying and referring persons with FAS. [MMWR 2005;54(No. RR-11) p. 6] The guidelines state that the following circumstances should prompt a diagnostic referral, even when knowledge of prenatal alcohol exposure is unknown:

• confirmation of prenatal exposure to substantial amount of alcohol seven or more drinks per week, three or more drinks on multiple occasions, or both)
• any report of concern by a parent or caregiver (e.g., foster or adoptive parent) that a child has or might have FASD;
• presence of all three facial features (i.e., smooth philtrum, thin vermillion border, and small palpebral fissures);
• presence of one or more of these facial features, with growth deficits in height, weight, or both;
• presence of one or more facial features, with one
or more CNS abnormalities; or
• presence of one or more facial features, with
growth deficits and one or more CNS
abnormalities.
The guidelines further state that the possibility of
FASD should be considered for individuals who
have experienced at least one of the following
social or family situations:
• premature maternal death related to alcohol use
  (either disease or trauma),
• living with an alcoholic parent,
• current or previous abuse or neglect,
• current or previous involvement with child
  protective services agencies (PSAs),
• a history of transient caregiving situations, or
• foster or adoptive placements (including kinship
  care)
[Streissguth AP, Bookstein FL, Barr HM,
Sampson PD, O’Malley K, Young JK. Risk factors
for adverse life outcomes in fetal alcohol
syndrome and fetal alcohol effects. Dev Beh Ped
2004;25:228–38.]

The guidelines also indicate that since only 25% of
individuals with full FAS have below IQ, a
measure of functional domains may reveal scores
below normal. For this reason, it is advised that a functional assessment be included in addition to an intelligence test. Experts like Ann Streissguth and Ed Riley recommend the Vineland Adaptive Behavior Scales, preferably the parent version, for most accurate assessment of the individual’s functional abilities.

**Functional Domains:**

- Cognitive deficits or developmental delays, such as learning disabilities, trouble with math, visual-spatial deficits.
- Executive function deficits (frontal lobe damage):
  - Problem solving
  - Lack of inhibitions
  - Difficulty applying strategies or changing strategies
  - Difficulty applying knowledge to new situation
  - Impaired judgment
- Motor function deficits, such as an infant’s poor suck, or a student’s poor writing skills.
- Attention deficits and/or hyperactivity
- Social skills problems, such as inappropriate behavior, lack of fear of strangers, immaturity, naiveté and gullibility.
Individuals with FASD are likely to have deficits in three or more of the above functional domains. These deficits can be present in those with a normal IQ and are difficult to detect and may not show up on a standard intelligence assessment. These deficits are more likely to be detected using the Vineland assessment tool. In most individuals with FASD, the Vineland score will be much lower than the individual’s IQ.