

Comparison of Three Methods for Diagnosing FASD-related Conditions

Institute of Medicine	Astley/Clarren "Washington Criteria" (2004)	Hoyme's "Clarification of IOM guides" (2005)
5 possible diagnoses	9 possible diagnoses	6 possible diagnoses
<ul style="list-style-type: none"> ■ FAS with confirmed alcohol exposure ■ FAS w/o confirmed alcohol exposure ■ partial FAS (pFAS) ■ ARND ■ ARBD 	<ul style="list-style-type: none"> ■ FAS with known alcohol exposure ■ FAS w/o known alcohol exposure ■ Partial FAS ■ Varying combinations of "sentinel" physical findings, with or w/o neurobehavioral disorder, static encephalopathy, and/or known alcohol exposure 	<ul style="list-style-type: none"> ■ FAS with confirmed alcohol exposure ■ FAS w/o confirmed alcohol exposure ■ partial FAS with confirmed alcohol exposure ■ partial FAS w/o confirmed alcohol exposure ■ ARND ■ ARBD
4 groups of criteria	IOM's 4 groups of criteria + rankings	3 groups of criteria (modified IOM)
<ul style="list-style-type: none"> ■ Growth deficiencies ■ Characteristic facial phenotype ■ Central nervous system damage/dysfunction ■ Alcohol exposure in utero 	<ul style="list-style-type: none"> ■ Degree to which each factor is present is ranked on a 4-point Likert scale (1 = complete absence of feature; 4 = full, classic presentation) ■ Results generate a 4-digit diagnostic "code:" 256 possible combinations (1111 – 4444), grouped into 22 diagnostic categories ■ 9 unique possible outcomes 	<ul style="list-style-type: none"> ■ Growth and structural development ■ Neuropsychologic, intellectual, and social development ■ Maternal risk factors
Pros	Pros	Pros
<ul style="list-style-type: none"> ■ Easy to use ■ Widely published and practiced ■ The first official guideline to address issues of phenotypes and differential diagnosis of FASD-related conditions 	<ul style="list-style-type: none"> ■ Widely published and practiced. ■ Objectively defines and quantifies facial phenotype, with specific instructions on how to measure eyes, lips, etc. and gives examples from Caucasian and African-American people ■ Data collection both supports and derives the diagnosis. ■ Has rankings for results of all neuropsychological tests (1 = within normal limits; 2 = mild to moderate delay or impairment; 3 = significant delay/impairment) ■ Has rankings for non-standardized observational measures ■ Assesses how much alcohol the patient was exposed to in utero and gives that a risk rating; alcohol exposure is reported independently of outcomes ■ "Sentinel" physical findings with no alcohol exposure allude to further diagnostic investigation needed ■ Clinicians other than physicians can perform parts of the evaluation ■ Charts of all results, plus a final letter explaining findings (to parents and others) are included in the booklet. All forms are suitable for medical charting ■ Online training courses available 	<p>Specifies which clinicians should assess each group of criteria:</p> <ul style="list-style-type: none"> ■ 2 dysmorphologists independently assess growth and structural development on a 36-point scale ■ A psychologist, neuropsychologist, developmental pediatrician, and an educational diagnostician assess neuropsychologic, intellectual, and social development ■ A social worker or similarly qualified clinician conducts a detailed, structured interview with the birth mother or collateral source (300 items, including childbearing patterns, drinking patterns before, during, and after the index pregnancy, marital and cohabitation patterns, socioeconomic status, demographic factors, social environment, and maternal nutrition) ■ Attempts to quantify IOM's criterion of "complex pattern of behavioral or cognitive abnormalities inconsistent with developmental level " ■ Criteria for ARND and ARBD are defined above and beyond IOM guidelines ■ Growth/structural development uses pieces of the "Washington criteria" but adds analysis to rule out possible genetic conditions and malformation syndromes

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<p>Cons</p> <ul style="list-style-type: none"> ■ Vague and open to misinterpretation: e.g., no specific parameters given (like degree of deficiency needed before being considered as a diagnostic criterion) ■ Degree of different deficiencies not quantified ■ Facial dysmorphic features that are required for each category are not well defined or quantified ■ Assessments of the child's family and genetic history aren't addressed adequately ■ ARND and ARBD are not defined well clinically 	<p>Cons</p> <ul style="list-style-type: none"> ■ Normative values are based primarily on North American Caucasian populations ■ Some clinicians may find it daunting to use at first ■ Must use a separate report to see which 4-digit codes are comparable to diagnoses of ARND and ARBD (http://depts.washington.edu/fasdpn) ■ Gives barely a nod to noting familial genetics (although familial mental health issues are documented well) 	<p>Cons</p> <ul style="list-style-type: none"> ■ Normative values are based primarily on North American Caucasian populations ■ New, so not widely studied

NOTE: Regardless of the method used, differentiation of FASD is a diagnosis of exclusion.

Resources:

1. Fetal Alcohol Syndrome: Diagnosis, Epidemiology, Prevention, and Treatment. National Academy Press. 1996.
2. Astley, Susan, and Clarren, Sterling. Diagnostic Guide for Fetal Alcohol Spectrum Disorders: The 4-digit diagnostic code. FAS Diagnostic and Prevention Network, University of Washington. Third edition 2004.
3. Hoyme, H. Eugene, et al. "A Practical Clinical Approach to the Diagnosis of Fetal Alcohol Spectrum Disorders: Clarification of the 1996 Institute of Medicine Criteria." Pediatrics. American Academy of Pediatrics. 2005; 115; pp. 39 – 47.