NOFAS Curriculum for Allied Health Professionals

Level 1
Competency II
Identification of FASD and Diagnosis of FAS

Diagnostic References for FAS

In the past decade or so, researchers and clinicians have worked to develop diagnostic criteria for fetal alcohol spectrum disorders. In 1996, the Institute of Medicine published a report that included various categories of these disorders and criteria for identifying them. Criteria included specific facial features, growth deficiency, nervous system damage, and maternal drinking history. The table summarizes the Institute of Medicine’s classification scheme.¹

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<th>Condition</th>
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<td>Face</td>
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<td>FAS I</td>
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<td>FAS II</td>
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<td>Partial FAS</td>
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<td>Alcohol-related neurodevelopmental disorder</td>
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Although the Institute of Medicine’s scheme was helpful, experts attempted to refine the criteria. In 2004, the Centers for Disease Control and Prevention (CDC) published Fetal Alcohol Syndrome: Guidelines for Referral and Diagnosis, available at www.cdc.gov/ncbddd/fas/documents/FAS_guidelines_accessible.pdf.²

The guidelines specified types of instruments to be used (e.g., Lip-Philtrum Guide for measuring thinness of upper lip and smoothness of philtrum, brain imaging). They also noted specific scores for certain measures (e.g., postnatal height at or below the 10th percentile, head circumference at or below the 10th percentile). In addition, the guidelines note conditions with similar symptoms, so that clinicians can rule these out before diagnosing FAS.

Currently, CDC is using a collaborative database of neurodevelopmental data from five intervention studies to explore the nature of individuals who could be considered in the diagnostic category of ARND. They are also looking at data from a prospective cohort study of 5-year-olds in Denmark. However, at this time, the only diagnostic category with scientific evidence to support clinical criteria is FAS. As future data and science are available, these
Guidelines can be refined and expanded to delineate other conditions resulting from prenatal alcohol exposure.

The University of Washington’s Fetal Alcohol Syndrome Diagnostic and Prevention Network has developed the Diagnostic Guide for Fetal Alcohol Spectrum Disorders: The 4-Digit Diagnostic Code, available at depts.washington.edu/fasdpn/pdfs/guide2004.pdf. This guide attempts to address certain diagnostic limitations. A major concern was that diagnostic terms such as ARND implied that alcohol exposure caused the birth defect or neurobehavioral disorder in an individual patient.

To address concerns related to causation, the 4-Digit Code uses terms that report prenatal alcohol exposure. Patient outcomes are not described as alcohol effects or alcohol-related outcomes. The 4-Digit Code also requires that all other adverse prenatal and postnatal exposures and events be documented. These also serve as important risk factors that must be considered when deriving a diagnosis and intervention plan.

The four digits in the 4-Digit Diagnostic Code reflect the magnitude of expression of four key diagnostic features of FASD in the following order: (1) growth deficiency, (2) FAS facial phenotype, (3) CNS abnormalities, and (4) prenatal alcohol exposure. The magnitude of expression of each feature is ranked independently on a 4-point Likert scale. A ranking of 1 reflects complete absence of the FAS feature and 4 reflects a strong “classic” presence of the FAS feature.

An example of the 4-Digit Code is 4444, which reflects the strongest expression of FAS (significant growth deficiency, all three FAS facial features, structural/neurological evidence of CNS damage, and confirmed prenatal exposure to high levels of alcohol). At the opposite end of the scale is the 4-Digit Code 1111. This code reflects typical growth, none of the three FAS facial features, no evidence of CNS abnormalities, and confirmed absence of prenatal alcohol exposure.

**FAS Diagnostic Criteria**

An FAS diagnosis has four components:

- Facial anomalies
- Growth deficiencies
- Central nervous system defects
- Maternal alcohol use during pregnancy

If the other three criteria are met, a diagnosis of FAS can be made without confirming maternal alcohol use.
Facial Anomalies

The facial anomalies that must be identified to confirm an FAS diagnosis are:

- Short palpebral fissures (eye openings) (at or below 10th percentile)
- Smooth philtrum (University of Washington Lip-Philtrum Guide rank 4 or 5)
- Thin vermillion border (upper lip) (University of Washington Lip-Philtrum Guide rank 4 or 5)

(add new photos)

- Small palpebral fissures
- Smooth philtrum
- Thin vermillion
Additional features that may be seen include epicanthal folds (skin of the upper eyelid that covers the inner corner of the eye), low nasal bridge, and short nose. In diagnosing FAS, it is important to consider racial and ethnic background. Some features, such as epicanthal folds, may be seen in certain ethnic groups, such as Asians.

The Lip-Philtrum Guide was developed by the FAS DPN to guide clinicians in diagnosing FAS. Because of racial and ethnic differences, two guides were developed. One is for Caucasians and one is for African-Americans. The Guide that best matches the phenotypic profile of the patient’s race should be used.

FAS Facial Features

Palpebral fissure length, philtrum, and upper lip differ with race and age. Facial anthropometric data are needed for the specific population, as sensitivity and specificity of the assessment will be lowered without the use of appropriate norms. It is also important to consider family traits. For example, some families might have thin upper lips. In addition, a thin upper lip in one racial group might be medium in another.
Growth Deficiencies

The primary parameters of growth that need to be impaired to meet the growth retardation criteria of FAS are height, weight, head circumference, or a combination thereof. The CDC guidelines specify confirmed prenatal or postnatal height or weight, or both, at or below the 10th percentile, documented at any one point in time. The measurements should be adjusted for age, sex, gestational age, and race or ethnicity. Again, family traits should be considered. Some families may tend to be smaller than the norm. The clinician would look for growth below genetic expectations based on parental size.

Growth retardation and growth deficiencies occur in children, adolescents, and adults for many reasons, such as poor nutrition. This could be a particular problem for infants with poor sucking responses who experience failure to thrive. In addition, several genetic disorders result in specific growth deficiencies (e.g., dwarfism). Prenatal growth retardation can be due to a variety of factors, including maternal smoking or other behaviors leading to hypoxia, poor maternal nutrition, or genetic disorders. Both environmental and genetic bases for growth retardation should be considered when diagnosing FAS.  

Source: Streissguth et al. 1991

( add New photo)
Central Nervous System Defects

The brain and spinal cord make up the CNS. The CNS can be damaged at any time during pregnancy. It is one of the first systems to form after conception and continues developing after birth. Prenatal exposure to alcohol can result in an array of structural, functional, neurological problems, or a combination of these, as well as abnormalities of the CNS.1

The CNS may be affected in many complex ways. CNS damage can cause learning and behavior problems. For example, children with FASD may have acute sensitivity to sound, light, touch, and temperature; irritability; attention problems; and jitteriness.4,5 Neurotransmitters are chemical messengers that allow communication to occur among nerve cells in the brain. This occurs thousands of times a day and is responsible for brain function. Prenatal exposure to alcohol significantly disrupts many neurotransmitter systems.

Prenatal alcohol exposure also may reduce serotonin levels.6 Serotonin plays a role in regulating mood, aggression, sexual activity, sleep, and sensitivity to pain. Fetal alcohol exposure has also been linked to attention and hyperactivity problems caused by dopamine abnormalities.7 Dopamine regulates motor function, pleasure and reward, and attention.

Studies of prenatal alcohol exposure have consistently found impaired motor control. Motor control is a complex function influenced by the CNS. It also involves the peripheral nervous system, which provides sensory feedback to the CNS. The vestibular system plays a role as well.
It is located in the inner ear and is involved in a person’s sense of balance. Defects in any of these systems can affect motor control.6

To meet the FAS diagnostic criteria for CNS abnormality, structural, neurological, or functional deficits, or a combination thereof, must be documented. It is also possible for an individual to present with more than one CNS structural, neurological, functional deficit or abnormality. Examples follow:

- **Structural.** Documented small or diminished overall head circumference (at or below the 10th percentile) adjusted for age and gender; clinically significant brain abnormalities observable through imaging techniques (e.g., reduction in size or change in shape of the corpus callosum, cerebellum, or basal ganglia).
- **Neurological.** Documented evidence of neurological damage to the CNS, such as seizures or other soft neurological signs outside normal limits (e.g., coordination problems, visual motor difficulties, difficulty with motor control).
- **Functional.** Assessment findings that indicate deficits, problems, or abnormalities in functional skills of the CNS. Problems may include decreased IQ or significant developmental delay in children too young for an IQ assessment or deficits in at least three functional domains. Domains include:
  - Cognitive deficits, such as slow information processing and visual-spatial deficits
  - Executive functioning deficits, such as poor organization, lack of inhibition, and difficulty grasping cause and effect
  - Motor functioning delays or deficits, such as delayed walking, difficulty with writing or drawing, clumsiness, and balance problems
  - Attention and hyperactivity problems
  - Social skills problems, such as lack of stranger fear, gullibility, and inappropriate choice of friends
  - Other potential domains that can be affected, such as sensory problems, pragmatic language problems, memory deficits, and difficulty responding appropriately to common parenting practices (e.g., not understanding cause-and-effect discipline)

**Specific Areas of the Brain Most Vulnerable to Prenatal Alcohol Exposure**

Alcohol can affect specific parts of the brain in ways that impair several functions.34

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• **Corpus Callosum.** The corpus callosum connects the two hemispheres of the brain, allowing the left and right sides to communicate. Prenatal alcohol exposure can cause abnormalities such as thinning or complete absence. These have been linked to deficits in attention, intellectual function, reading, learning, verbal memory, executive function, and psychosocial functioning.

![Brain Images](image)

A. Magnetic resonance imaging showing the side view of a 14-year-old control subject with a normal corpus callosum; B. 12-year-old with FAS and a thin corpus callosum; C. 14-year-old with FAS and agenesis (absence due to abnormal development) of the corpus callosum.


• **Hippocampus.** The hippocampus is involved in memory, but its precise function is uncertain. Alcohol can change the fibers and cause cell reduction. Some persons with prenatal alcohol exposure have deficits in spatial memory and other memory functions associated with the hippocampus. The hippocampus also acts as a mood control center. Damage to the hippocampus can affect the ability to respond appropriately to emotions, such as anger.

• **Basal Ganglia.** The basal ganglia are nerve cell clusters involved in motor abilities and cognitive functions. Heavy prenatal alcohol exposure can reduce basal ganglia volume. This can affect skills related to perception, such as the ability to manage time or inhibit inappropriate behavior.

• **Cerebellum.** The cerebellum is involved in both motor and cognitive skills. The cerebellum tends to be smaller in people with FASD. Damage to the cerebellum can cause learning deficits and problems with motor skills, such as balance and coordination.

• **Hypothalamus.** The hypothalamus helps maintain the body's internal environment through the receipt of sensory and chemical input. It controls areas such as appetite, emotions, temperature, and pain sensation. Persons with FASD may not experience pain or respond appropriately to hot or cold.

• **Frontal Lobes.** The frontal lobes control executive functions, such as planning and problem solving. They also control impulses and judgment. Frontal lobes can be smaller in teenagers and young adults prenatally exposed to alcohol. Persons with FASD may have poor impulse control and self-monitoring. They might engage in risky or illegal activity to fit in with peers.
This damage can lead to developmental delays, learning disabilities, and behavior problems, such as:

- Mental retardation
- Attention deficits
- Hyperactivity
- Poor impulse control
- Problems in social perception
- Speech and language delays or deficits
- Poor capacity for abstract thinking
- Specific deficits in math skills
- Problems in memory, attention, or judgment
- Problems with cause and effect
- Problems anticipating consequences
- Problems changing behavior or response in different situations

Although many of these problems may respond to medication and behavioral interventions, the effects of prenatal alcohol exposure are permanent.
Common Disorders Associated With Prenatal Alcohol Exposure

FASD is an umbrella term describing the range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects may include physical, mental, behavioral, and/or learning disabilities with possible lifelong implications. The term FASD is not intended for use as a clinical diagnosis. It refers to conditions such as:

- **Fetal alcohol syndrome.** FAS is the term coined in the United States in 1973 by Dr. Kenneth Jones and Dr. David Smith at the University of Washington to describe individuals with documented prenatal exposure to alcohol and (1) prenatal and postnatal growth retardation, (2) characteristic facial features, and (3) central nervous system problems.\(^8\)

- **Alcohol-related neurodevelopmental disorder.** ARND, a term coined by the Institute of Medicine in 1996, is used to describe individuals with confirmed maternal alcohol use, neurodevelopmental abnormalities, and a complex pattern of behavioral or cognitive abnormalities inconsistent with developmental level and not explained by genetic background or environment. Problems may include learning disabilities, school performance deficits, inadequate impulse control, social perceptual problems, language dysfunction, abstraction difficulties, mathematics deficiencies, and judgment, memory, and attention problems.

- **Alcohol-related birth defects.** ARBD, a term coined by the Institute of Medicine in 1996, is used to describe individuals with confirmed maternal alcohol use and one or more congenital defects, including heart, bone, kidney, vision, or hearing abnormalities.
The FAS Diagnostic and Prevention Network’s diagnostic guide does not use ARND or ARBD. The guide identifies more than 20 diagnostic categories, with and without alcohol exposure. Examples include:

- Fetal alcohol syndrome (alcohol exposed)
- Fetal alcohol syndrome (alcohol exposure unknown)
- Sentinel physical finding(s) (alcohol exposed)
- Partial fetal alcohol syndrome (alcohol exposed)
- Static encephalopathy (alcohol exposed)
- Neurobehavioral disorder (alcohol exposed)
- Static encephalopathy (alcohol exposure unknown)
- Neurobehavioral disorder (alcohol exposure unknown)

**Signs and Symptoms of FASD That May Be Confused With Other Disorders**

Because diagnosing FASD is so difficult, many individuals with FASD are diagnosed and treated for individual symptoms or conditions, such as attention deficit disorder, rather than FASD. A co-occurring disorder may be noted and the prenatal alcohol exposure may be missed. Co-occurring disorders with FASD may include:

- Attention deficit/hyperactivity disorder
- Autism Spectrum Disorders
- Oppositional defiant disorder
- Conduct disorder
- Reactive attachment disorder
- Schizophrenia
- Depression
- Bipolar disorder
- Substance use disorders
- Posttraumatic stress disorder

If FASD is not recognized, misdiagnoses are common. This problem often occurs with adolescents and adults. Signs and symptoms of FASD that may be missed or attributed to other causes include:

- Attention problems
- Bonding problems
- Feeding problems
- Delayed development
- Speech and hearing deficits
- Vision problems
- Hyperactivity
- Poor coordination
- Learning problems
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- Memory lapses
- Clumsiness
- Temper tantrums
- Disobedience

Identifying alcohol exposure as a problem can help in choosing appropriate interventions. For example, medications that are used to treat attention deficits may not be effective in persons with FASD if the medication is used for a chemical imbalance and the deficits are caused by structural brain damage. In addition, seemingly defiant behavior may be caused by frustration in not understanding directions. Persons with FASD often have trouble following directions, especially when multiple steps are involved.

Diagnosis

Because most people with FASD have no visible signs of alcohol exposure, their problems may be wrongly blamed on poor parenting or on other disorders. Early diagnosis and intervention contribute to positive long-term outcomes. Accurate diagnosis can:

- Help the person receive appropriate services and entitlements such as Supplemental Security Income
- Aid communication among clinicians, caregivers, educators, and families
- Provide better self-awareness and understanding by family members

Diagnostic Procedures

Many variables are considered in the diagnosis of FASD. Specialists trained in dysmorphology and neurodevelopmental assessment and who understand the effects of prenatal alcohol exposure are best qualified to diagnose these disorders. They will also be able to recognize alternative syndromes and neurodevelopmental conditions.

FASD is not a medical diagnosis but is a descriptive term for various disorders. FAS is a medical diagnosis included in the International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM). The code is 760.71, "noxious influences affecting fetus via placenta or breast milk, specifically alcohol; includes fetal alcohol syndrome."

Recent scientific advances have found that detection of fatty acid ethyl esters (FAEE) in neonatal meconium may be used as a screening method for intrauterine exposure to alcohol (Chan 2004). Using meconium FAEE levels as a biological marker can facilitate early diagnosis and intervention for forms of FASD that are not as apparent as FAS. Hopkins et al. determined the cost effectiveness of testing for prenatal alcohol exposure via meconium FAEE levels. They found that the screening test in Canada only cost $150, while the benefit of early intervention was found to improve the patient’s literacy, quality of life, and lifetime earnings by $26,400 per year.

FAS is a medical diagnosis and the most visible disorder caused by prenatal alcohol exposure. The diagnosis of FAS can be made by a trained physician or physician assistant (PA). Other,
more complicated FASD’s are typically referred to FASD diagnostic centers where a team approach would be best. The medical examination includes:

- Evaluation of the prenatal and birth history and previous medical history
- General physical examination (height, weight, vision, hearing, cardiogram, etc.)
- Evaluation of early and current growth patterns
- Measurement of facial features
Assessments may include an IQ test and evaluation of:

- Cognitive deficits, such as memory problems, or developmental delay
- Executive functioning deficits, such as problems following multistep directions
- Motor delays or deficits, such as clumsiness or tremors
- Attention deficits and hyperactivity
- Social skills, such as interrupting others and misreading cues
- Behavior problems, such as aggression or not finishing tasks

Examples of specific tests clinicians use include Conners Rating Scales, Vineland Adaptive Behavior Scales, and Children’s Memory Scale.

Ideally, input and testing by specialists will be obtained to enhance the diagnosis. These include:

- Geneticist, who can assess genetic influences on the child’s condition
- Developmental pediatrician, who can look at milestones and behaviors
- Dysmorphologist, who specializes in birth defects
- Speech pathologists, who can assess abilities to understand and communicate
- Occupational therapists and physical therapists, who can assess motor functions and adaptive abilities
- Psychologists, who can conduct developmental tests to determine abilities and deficits
- Neurologists and neuropsychologists, who can describe cognitive impairments and explain their causes and evaluate behavioral impairments resulting from brain injury
- Psychiatrists, who can assess signs and symptoms of mental health disorders and suggest medication as appropriate
- Nurses, social workers, and other licensed behavioral health specialists, who can assess family dynamics and other related issues
- Education consultants, who can identify learning disabilities and other issues related to the child’s ability to learn and function in a classroom
- Parents who are familiar with this disorder and work with other parents either in training or parent support groups and can help with family support and advocacy

It is also useful to get input from teachers, parents, and caregivers for an accurate diagnosis and understanding of the person’s specific pattern of effects and needs. Often, people who interact with the individual on a regular basis can detect problems that specialists might miss. For example, some children with FASD are affectionate and can be happy, social, and gregarious. These are seen as positive qualities. Behavior not appropriate to their developmental stage is more often detected in school where teachers can compare the behaviors with other children. Others may do well in school but have much more difficulty at home or in social and peer situations.
Early diagnosis is important in getting appropriate services. A targeted treatment plan will help improve outcomes. Effective intervention at a young age can reduce risk factors and help prevent secondary disabilities. Secondary disabilities result from a poor fit between the individual and the environment.


Secondary disabilities in persons with FASD include alcohol and drug problems, confinement in a correctional or treatment facility, and involvement with the criminal or juvenile justice system. The chart shows the occurrence of secondary disabilities in 415 individuals between the ages of 6 and 51. Although this is the only study to date of secondary disabilities, anecdotal evidence indicates that these problems occur frequently in persons with FASD.

Interventions for persons with FASD vary, depending on individual needs. Few interventions have been rigorously tested or proven effective with persons with FASD. However, certain strategies appear promising and have been shown to help, such as breaking tasks into steps and giving one direction at a time.

Often, the diagnosis is unclear because the individual does not have definite FAS facial features or prenatal alcohol exposure cannot be confirmed. Addiction professionals are likely to encounter clients with FASD, because about 30 percent of persons with FASD have alcohol and drug problems. Some may not have a definite diagnosis of FASD due to inability to identify FAS facial features or confirm prenatal alcohol exposure. If FASD is suspected, counselors should incorporate strategies used with individuals who have been diagnosed with FASD.
Diagnostic Issues and Challenges

Several issues arise in obtaining a diagnosis of FASD. Women who already have given birth to a child with FASD are more likely to have another child with FASD. Counselors need to keep this in mind when working with mothers of children with FASD. They may need additional support and education to help prevent them from having more children with FASD. When FASD is suspected, it is important to refer individuals for diagnosis. Signs that may indicate the need for assessment include:

- Sleeping, breathing, or feeding problems
- Small head or facial or dental anomalies
- Heart defects or other organ dysfunction
- Deformities of joints, limbs, and fingers
- Slow physical growth before or after birth
- Vision or hearing problems
- Intellectual disability or delayed development
- Behavior problems

If clients mention that their children have these signs or symptoms, it might help to gently broach the subject of an assessment. A limited number of experts are available who specialize in FASD evaluation. Depending on the community, services might be available from a developmental pediatrician, FASD clinic, a genetics clinic, or another specialist. The National Organization on Fetal Alcohol Syndrome (NOFAS) maintains a Web-based directory of FASD services at [www.nofas.org/resource/directory.aspx](http://www.nofas.org/resource/directory.aspx)

As individuals get older, diagnosis can create challenges. Physical features may change over time, there may be catch-up growth, and cumulative environmental influences may distort the evaluation of brain function. An adolescent or adult may experience traumatic head injury, alcohol and drug abuse, and mental health problems.\(^\text{13}\)

Although tests for various domains are readily available, they are often not sensitive to real-life issues faced by adolescents and adults. In addition to the data required for the diagnosis, an assessment must include additional components such as functional literacy and math skills, employability, and quality of life, which fall within the domain of adaptive skills. The clinician should not rely solely on the self-report of the individual prenatally exposed to alcohol. The history and abilities of the individual must be verified by a reliable source.\(^\text{13}\)
Developmental Overview Throughout the Lifespan

newborns & infants

- Recurrent ear infections
- Failure to thrive
- Nursing difficulties
- “Disorganized” infants
- “Strawberry” Birthmarks/Hemangiomas
- Excessive body hair
- Poor sleep/wake cycles
- Low birth weight

Infants

- Seizure Disorder
- Cardiac defects
- Facial clefts (lip/palate)
- Eating difficulties
- Slow to pull head up, sit up, roll over, creep, crawl
Developmental Overview
toddlers and children

- Small nails on hands and/or toes irregularity of nails
- Dental Abnormalities
  - Misaligned and malformed teeth
- Small Appetites
- Sensory integration issues
- Distracted Easily
- Memory Deficits

Developmental Overview
early school age

- Continued sleep problems
- Making and keeping friends
- Reading social cues
- Boundary issues
- Doesn’t understand stranger safety
- Easily frustrated/tantrums
- Understanding cause/effect relationships
- Language/Speech
  - Low receptivity/high fluency
- Math problems
  (time/money)
Developmental Overview
adolescence-school age

- Poor coordination
- Memory, judgment, reason
- Continued learning problems (especially math)
- Poor bonding with peers
- Diagnosed with ADHD or other MH disorders
- Short term memory problems
- Uninhibited and impulsive or withdrawn and isolated
- Socially engaging
- Gangs/alcohol and drugs

ADD LINK Meet Chris Goudy, a young man with FASD. Hear about his strengths and some of the barriers he has overcome.
Developmental Overview of Adults

- Naïve - victimization
- Poor judgment
- Possible behaviors: 
  - lying and stealing
  - antisocial behavior
  - mood swings
- Need for: 
  - transitional placement
  - Voc rehab
  - Job coaching
  - SSI/disability services
  - Social club involvement

Photo courtesy of Teresa Kellerman

Professional Values and Ethics

Having FASD can affect recovery. Women with FASD might have trouble processing the steps in a 12 step program. They might have difficulty remembering appointments. In addition, they can be easily influenced by peers. They may relapse if they return to an environment in which friends or relatives drink. It is important that clients suspected of having FASD be assessed so that treatment plans can be tailored accordingly.

Having a child with FASD can also affect a woman’s recovery process. Raising a child with FASD can be extremely stressful and may trigger drinking episodes or relapse. Children suspected of having FASD should also be evaluated. An early diagnosis can help in obtaining needed services, thus decreasing stress and increasing the woman’s chances of continuing her recovery process.

Receiving a diagnosis of FASD for oneself or one’s child can be upsetting. Some people are relieved to have an explanation for their problems. Others may feel shame or embarrassment. Many mothers face social stigma associated with drinking while pregnant and internalize feelings of blame, shame, and guilt. Their families might also feel ashamed. Partners might feel guilty for not knowing about FASD or not trying harder to keep the woman sober during her pregnancy. Counselors need to be mindful of such feelings so that they can assist clients and their families in processing their reactions.
Dealing with FASD is complex and difficult and requires open, honest, and sensitive communication. Counselors need to work especially hard to establish trust and rapport with clients who may have been prenatally exposed to alcohol or have children with FASD.

Sensitivity to the client’s family situation and cultural values is key. For example, some cultures believe that pregnancy is a sacred time and that drinking while pregnant breaks the sacred trust. Clients within these cultural groups who believe in these values may need spiritual guidance to cope with this knowledge, while others may want a more secular approach. Counselors need to be culturally competent. They need to have substantive, accurate knowledge of the client’s background and beliefs. They also need the skills to use this knowledge to form a productive relationship that will support ongoing recovery.

References (alphabetical order)

14. Chan 2004
15. Hopkins (merconium)

Author?? “Re-examining the core features of autism: a comparison of autism spectrum disorder and fetal alcohol spectrum disorder”

Nash ??? not sure if I want to add this (phenotype)