alcohol required to produce fetal effects is unclear, but it is known that infants born to heavy drinkers have twice the risk of congenital abnormalities than those born to moderate drinkers (Carlo, 2011). Alcohol withdrawal can occur in neonates, particularly when maternal ingestion occurs near the time of delivery. Signs and symptoms include jitteriness, increased tone and reflex responses, and irritability. Seizures are also common. Fetal effects of alcohol exposure vary from subtle learning disabilities to obvious facial features and growth abnormalities. In 2004, the National Organization on Fetal Alcohol Syndrome clarified terminology for fetal alcohol exposure by adopting the term *fetal alcohol spectrum disorder (FASD)* as an umbrella term to describe the range of clinical effects. Fetal alcohol syndrome (FAS) falls within this spectrum but is reserved for individuals who display the triad of characteristic facial features, growth restriction, and neurodevelopmental deficits with a confirmed history of maternal alcohol consumption (Pruett, Waterman and Caughey, 2013). Craniofacial features include microcephaly, small eyes or short palpebral fissures, a thin upper lip, a flat midface, and an indistinct philtrum. Neurologic problems in FAS children include some degree of intelligence quotient (IQ) deficit, ADHD, diminished fine motor skills, and poor speech. These children have been shown to lack inhibition, have no stranger anxiety, and lack appropriate judgment skills.

Infants who do not display the signs of FAS but are born to mothers who are also heavy alcohol drinkers have significantly more tremors, hypertonia, restlessness, excessive mouthing movements, crying, and inconsolability than infants of substance-abusive mothers who do not consume alcohol during pregnancy. An added concern regarding substance abuse is that many of the mothers often use several drugs, such as tranquilizers, sedatives, amphetamines, phencyclidine, marijuana, and other psychotropic agents.

Cocaine Exposure

Cocaine is a CNS stimulant and peripheral sympathomimetic. Legally, it is classified as a narcotic, but it is not an opioid. The effects on fetuses are secondary to maternal effects, which include increased BP, decreased uterine blood flow, and increased vascular resistance. Consequently, the fetus experiences decreased blood