

## The Impact of Maternal High Risk Behaviors on Child Development: Related Resources and Websites



### ***Selected Bibliography:***

The Medical and Developmental Consequences of Prenatal Drug Exposure (2008) by Karen K. Howell, Claire D. Coles, and Julie Kable. In Brick, J. (Ed.), *Handbook of the Medical Consequences of Alcohol and Drug Abuse*. The Haworth Press: Binghamton, NY.

Children, Families, and Substance Abuse (1995) by G. Harold Smith, Claire D. Coles, Marie Kanne Poulsen, & Carol K. Cole. Paul H. Brookes Publishing Company: Baltimore, MD.

Substance Abuse: The Nation's Number One Health Problem (2001) prepared by the Schneider Institute for Health Policy, Brandeis University for The Robert Wood Johnson Foundation: Princeton, NJ.

The Courage to Change: A Report on Substance Abuse in Georgia (2001) prepared by the Georgia Council on Substance Abuse: Atlanta, GA.

Practical Approaches in the Treatment of Women Who Abuse Alcohol and Other Drugs (1994) by the Center for Substance Abuse Treatment. Department of Health and Human Services, Public Health Service: Rockville, MD.

Principles of Drug Addiction Treatment: A Research-Based Guide (1999) by the National Institute on Drug Abuse. National Institutes of Health: Rockville, MD.

### ***Selected Websites:***

Maternal Substance Abuse and Child Development Project at Emory University:

[www.emory.edu/MSACD](http://www.emory.edu/MSACD)

Marcus FAS/Prenatal Drug Exposure Clinic: [www.marcus.org](http://www.marcus.org)

National Institute on Alcoholism and Alcohol Abuse: [www.niaaa.nih.gov](http://www.niaaa.nih.gov)

National Institute on Drug Abuse: [www.nida.nih.gov](http://www.nida.nih.gov)

Substance Abuse and Mental Health Services Administration: [www.samhsa.gov](http://www.samhsa.gov)

Centers for Disease Control and Prevention: [www.cdc.gov/ncbddd/fas](http://www.cdc.gov/ncbddd/fas)

Organization of Teratology Information Specialists: [www.OTISpregnancy.org](http://www.OTISpregnancy.org)

# FACTS ABOUT SMOKING DURING PREGNANCY



## WHY

Should we be concerned about smoking during pregnancy?

## Frequently Asked Questions About Maternal Smoking During Pregnancy

### How many mothers smoke during pregnancy?

- ❖ 27% of women are smokers during their childbearing years.

### How many mothers who smoke are able to quit during their pregnancy?

- ❖ In the National Health Interview Survey done in 1990, only 27% of the women quit immediately after being told that they were pregnant and an additional 12% quit by the 3<sup>rd</sup> trimester.

### How does cigarette smoke harm an unborn baby?

- ❖ Tobacco smoke has over 3,800 products in it with carbon monoxide and nicotine being the two largest components of the smoke. Cigarette smoke may harm a fetus by reducing blood flow or flow of oxygen to the fetus, by reducing the nutrients that reach the fetus, and by direct action to the fetus.



### Does maternal smoking during pregnancy result in smaller babies?

- ❖ The most consistent finding associated with maternal smoking during pregnancy is lower birthweight. Most studies find a difference of 200-250 grams between babies of mothers who smoke and those who do not. In addition, the incidence of intrauterine growth retardation has been found to be higher among women who smoked during their pregnancy.

### Does maternal smoking during pregnancy result in premature babies?

- ❖ The length of the pregnancy has been found to be lower among women who smoked during the pregnancy but the average decrease is typically 1-2 days. Studies assessing the incidence of prematurity have found mixed results, with some finding a significant increase and others not.



### Does prenatal exposure to tobacco smoke cause Sudden Infant Death Syndrome (SIDS)?

- ❖ Studies examining the incidence of SIDS among women who smoke during pregnancy have also been mixed with some finding significant effects and others not. Parental smoking during early development has also been linked to an increased incidence of SIDS as a result of environmental tobacco smoke on a young respiratory system.

### Does maternal smoking during pregnancy cause birth defects?

- ❖ A few studies have been suggestive of birth defects. One study found a 17-fold increase in the incidence of anencephaly (no forebrain or cerebrum) associated with maternal smoking and another found an increased incidence of congenital heart disease. However, there have been no consistent findings of a pattern of birth defects associated with maternal smoking. Additional studies that control for other important factors that may impact fetal development are needed.



# FACTS ABOUT SMOKING DURING PREGNANCY

## What are the long-term effects on the growth of children exposed to tobacco smoke during pregnancy?

❖ The results from the British National Child Development Study on children's growth and development suggested that children of women who smoked during their pregnancy continued to be shorter (an average of 1.0 cm) at seven and 11 years of age than children of women who did not smoke during pregnancy.

## What are the other long-term effects of tobacco smoke during pregnancy?

❖ The respiratory systems of children whose mothers smoke during pregnancy may be impaired. Children of women who smoke at least 10 cigarettes a day have a higher incidence of asthma than children of women who do not smoke. Postnatal exposure to tobacco smoke also has been linked to increased incidence and increased severity of asthma symptoms.

## What are the long-term effects on the neurological development of children being exposed to tobacco smoke during pregnancy?

❖ Evidence for a general learning deficit being associated with maternal smoking has been inconsistent; some studies found small differences and others found no differences at all. More consistently, children of smokers have been found to have added hearing difficulties. Studies have identified this deficit in newborns and in children as old as 12 years of age. Deficits in this area may interfere with a child's learning to speak and later in learning to read. Finally, some studies suggest that children of women who smoke may have problems staying focused, more conduct problems, and an increased probability of being diagnosed with Attention Deficit Disorder.

## Does maternal passive exposure to environmental tobacco smoke (ETS) harm the unborn child?

❖ Prenatal and postnatal tobacco smoke tend to be related, making it difficult to assess the relative contributions of the different methods of exposure. The available evidence suggests that ETS can contribute to similar effects associated with active maternal smoking. However, the size of the effects tends to be smaller.

**FACT:**  
It is never too late  
to stop smoking  
during  
pregnancy!

## Where To Go For Help and Resources



Nicotine Anonymous 1-415-750-0328 [www.nicotine-anonymous.org](http://www.nicotine-anonymous.org)  
American College of Obstetrics & Gynecology 1-202-638-5577 [www.acog.org](http://www.acog.org)  
National Women's Health Information Center 1-800-994-WOMAN [www.4woman.org](http://www.4woman.org)  
American Cancer Society 1-800-ACS-2345 or [www.cancer.org](http://www.cancer.org)  
American Lung Association 1-800-586-4872 or [www.lungusa.org](http://www.lungusa.org)  
National Cancer Institute 1-800-4-CANCER or [www.nci.gov](http://www.nci.gov)



For additional information on tobacco use, visit our website at [www.emory.edu/MSACD](http://www.emory.edu/MSACD) or the Center for Disease Control and Prevention website at [www.cdc.gov/tobacco/index.html](http://www.cdc.gov/tobacco/index.html). The Maternal Substance Abuse and Child Development Project is funded in part by the Georgia Department of Human Resources, Division of Public Health.

# Facts about Preterm Birth

Preterm births are those that occur prior to 37 completed weeks of gestation. They are classified as moderately preterm (32-36 weeks) and very preterm (less than 32 completed weeks). A variety of complications can occur with preterm births, and preterm infants are considered to be a higher risk for developmental delays.

According to the March of Dimes, approximately 1 in 8 babies was born preterm in Georgia in 2002. Multiple births (more than one baby) were 6 times more likely to be preterm.

## Risk Factors for Preterm Birth:











**Maternal Age:** Mothers who are older (over 40) and very young (under 20) have the highest rates of very preterm births in Georgia

**Race/Ethnicity:** African American (Black) infants were twice as likely as White infants and three times as likely as Hispanic infants to be very preterm births. Native American infants are also at a higher risk than White infants.

**Plurality:** Multiple births were 9 times more likely than singleton births to be born very preterm in Georgia.










**Previous Birth History:** Women with a history of previous preterm births are more likely to experience another.

## Medical factors:

-  Urinary tract infections, vaginal infections, sexually transmitted infections and possibly other infections
-  Diabetes
-  High blood pressure
-  Clotting disorders (thrombophilia)
-  Bleeding from the vagina
-  Certain birth defects in the baby
-  Being pregnant with a single fetus after in vitro fertilization (IVF)
-  Being underweight before pregnancy
-  Obesity
-  Short time period between pregnancies (less than 6-9 months between birth and the beginning of the next pregnancy)

## Research has also documented other risk factors for preterm births that are modifiable.

### These are lifestyle factors:

-  Late or no prenatal care
-  Smoking
-  Drinking alcohol
-  Using illegal drugs
-  Exposure to the medication DES
-  Domestic violence, including physical, sexual or emotional abuse
-  Lack of social support
-  Stress
-  Long working hours with long periods of standing

Maternal Substance Abuse and Child Development Project, Emory University School of Medicine  
1256 Briarcliff Rd. NE. Atlanta, GA 30306 (404) 712-9800  
[www.emory.edu/MSACD](http://www.emory.edu/MSACD)

The Maternal Substance Abuse and Child Development Project at Emory University is funded in part by the Georgia Department of Human Resources, Division of Public Health

# Facts about Drug Use During Pregnancy

## What are illegal drugs?

Marijuana, cocaine, methamphetamines, opiates

## Understanding the Effects of Prenatal Exposure to Illegal Drugs

- Marijuana is the most common illegal drug, used by 14% of pregnant women.
- Cocaine is used by 2-3% of pregnant women.
- Opiates (e.g., heroin, methadone) are used by .5%.
- Polydrug use is common. Alcohol is quite often used concurrently with other drugs of abuse, typically marijuana, cocaine and cigarettes.
- Heavy drug use in pregnancy is associated with many other risk factors including poverty, mental illness, and illegal activities.

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## What are the Effects of Drug Use on the Infant and Child?

- Medical problems for pregnant women
- Increased fetal mortality
- Increased neonatal complications
- Premature delivery
- Lower birthweight
- Increased respiratory problems
- Neonatal Withdrawal Syndrome (from opiates)
- Increased incidence of Sudden Infant Death Syndrome (SIDS): the rate of breathing problems and SIDS is higher among babies of substance-abusing women (8.87 per 1,000 births) than the general population (1.22 per 1,000 births).
- Increased risk of postnatal environmental problems (e.g., neglect)

**Children born to substance-abusing mothers, or living with substance-abusing parents, need early identification and intervention.**

# Facts about Drug Use During Pregnancy

## Myths about Illegal Drug Exposure

| Myth   | Reality   |
|--|---|
| Long-term deficits   | No serious developmental effects found when the environment is accounted for.   |
| Cocaine Withdrawal Syndrome lasts for one month                      | Opiates cause neonatal withdrawal, not cocaine. No “withdrawal” syndrome lasts for non-CNS depressant drugs.                                  |
| We know all about the effects of maternal substance abuse in infants | We don’t know about the effects of most drugs and what we do know is fairly limited. Much of what you read and hear is speculation and rumor. |

## Where to Turn

### Diagnosis:

Babies Can’t Wait

In Atlanta (404) 657-2726 or toll free: 1-888-651-8224.

Marcus Institute Fetal Alcohol Center

1920 Briarcliff Road  
Atlanta, GA 30329  
(404) 419-4256



## Resources

Coles, C.D. & Platzman, K.A. (1993). Behavioral development in children prenatally exposed to drugs and alcohol. International Journal of the Addictions, 28, 1393-1433.

Maternal Substance Abuse and Child Development Project website @ [www.emory.edu/MSACD](http://www.emory.edu/MSACD)

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# Adults with FAS

## What is FAS?

- Fetal Alcohol Syndrome (FAS) and the spectrum of associated disorders that result from maternal alcohol use during gestation (i.e., pFAS, ARND; Stratton, et al., 1996) are among the most common developmental disorders (MMWR, 1993).
- Prenatal exposure leads to alterations in facial morphology, growth and neurocognition (Jones & Smith, 1973) and these problems may persist through out life in some people.



## What do we know about Adults Affected by Alcohol?

- There is very limited research or clinical information about adults with FAS.
- Studies have been done mostly with “clinical” samples, made up of people referred with problems. Very little is known about alcohol-exposed adults who don’t apply for services.
- For the most part, people with FAS are similar to other individuals with disabilities.
- Most alcohol-exposed adults lead normal lives, particularly those who are not diagnosed with FAS.
- Adolescence can be difficult for individuals with disabilities. Those affected by prenatal exposure may show antisocial behavior, school problems, and learning difficulties during adolescence. This is more likely if they showed similar problems during childhood (Olson, et al, 1997).
- In adulthood those people with growth retardation and a characteristic facial features, may have lowered intellect, overactivity, and learning disabilities. However, there can be a great deal of difference in the kind of problems that adults show (Kerns & Don, 1997).
- In a study (Famy, et al, 1998) of mental health disorders among patients, older than 18, participating in an on-going study on FAS, a number of problems were found. The most common axis I disorders were alcohol or drug dependence, depression, and psychotic disorders. The most common axis II disorders were avoidant, antisocial and dependent personality disorders. Many individuals with FAS have an IQ in the borderline range.

## Programs that may help Adults with FAS:

- GED programs
- Sheltered workshops
- Assisted living facilities
- Behavioral therapy
- Life-skills training
- Vocational/job training and vocational rehabilitation
- Disability status and payments from the Social Security Administration



## Resources for Adults with FAS:

- Georgia Department of Human Resources, Division of Mental Health, Mental Retardation and Substance Abuse, located at [www.mhddad.dhr.georgia.gov](http://www.mhddad.dhr.georgia.gov) MHDDAD provides treatment and support services to people with mental illnesses and addictive diseases, and support to people with mental retardation and related developmental disabilities.

- Helpline Georgia, located at [www.hodac.org](http://www.hodac.org) and 1-800-338-6745. Helpline Georgia provides information and referrals for a wide variety of programs in Georgia.
- Atlanta Alliance on Developmental Disabilities, located at [www.aadd.org](http://www.aadd.org) AADD provides services to individuals with developmental disabilities and their families.
- United Way – <http://www.national.unitedway.org> or dial 211 – United Way is dedicated to mobilizing community resources to best help those in need.
- The Marcus Institute, located at [www.marcus.org](http://www.marcus.org) Marcus Institute provides a comprehensive array of diagnostic and evaluation services and support programs to people with Developmental Disabilities and their families, as well as those who live and work with them. The Marcus Center will occasionally evaluate adults for FAS.
- Governor's Council on Developmental Disabilities – <http://www.gcdd.org> – This Georgia organization "is charged with creating systems change for people with developmental disabilities and their families to: Increase independence, inclusion, integration, and productivity for people with disabilities through such activities as public policy research, analysis, and reform, project demonstrations, and education and training."
- The Georgia Job Corps, located at [www.jobcorps.doleta.gov/centers/ga.cfm](http://www.jobcorps.doleta.gov/centers/ga.cfm) At Job Corps, students enroll to learn a trade, earn a high school diploma or GED and get help finding a good job.
- Atlanta Enterprise Center, located at [www.atlantaenterprisecenter.org](http://www.atlantaenterprisecenter.org) AEC offers job readiness training workshops, life skills training, job counseling, job referrals and placement assistance, case management, and computer literacy classes.
- Social Security Disability and Supplementary Security Income – located at <http://www.ssa.gov/disability> – These federal programs pay benefits to people with disabilities.

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**Sources:**

- Famy, Chris, Streissguth, Ann P., Unis, Alan S., (1998) Mental Illness in Adults With Fetal Alcohol Syndrome or Fetal Alcohol Effects. *American Journal of Psychiatry*, 155, 552-554.
- Jones, K.L., Smith, D.W. (1973) Recognition of the fetal alcohol syndrome in early infancy. *Lancet*, 2, 989.
- Kerns, Kimberly A., Don, Audrey, (1997) Cognitive Deficits in Nonretarded Adults with Fetal Alcohol Syndrome. *Journal of Learning Disabilities*, 30.
- Olson, Heather Carmichael, Streissguth, Ann P., Sampson, Paul D., Barr, Helen M., Bookstein, Fred L., Thiede, Keith, (1997) Association of Prenatal Alcohol Exposure with Behavioral and Learning Problems in Early Adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 1187-1194
- Stratton, K., Howe, C., & Battaglia, F. (Eds.) (1996) *Fetal Alcohol Syndrome: Diagnosis, epidemiology, prevention and treatment*. Washington, DC: National Academy Press.
- Streissguth, Ann P., Barr, Helen M., Kogan, Julia, Bookstein, Fred L. (1996) *Understanding the Occurrence of Secondary Disabilities in Clients with Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE)*. Seattle Washington: University of Washington Publication Services.



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# FASt Facts FASt Facts FASt Facts



## Common Problems in Alcohol Affected Children

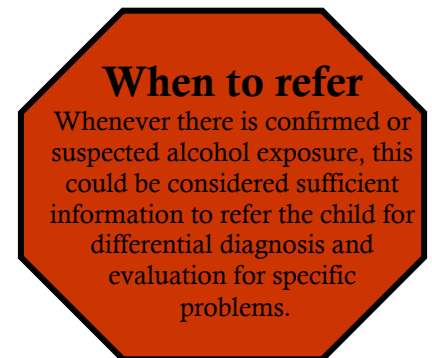
- **Minor medical problems** such as ear infections, allergies, and asthma.
- **Failure to thrive in infancy**, indicating significant growth delay that may also affect developmental progress and attachment.
- **Feeding problems** such as weak suck and difficulty grasping a nipple in infancy, and later decreased appetite or difficulty retaining food.
- **Delays in motor development in infancy** including poor gross motor skills, delays in fine motor skills, and hand tremors.
- **Delays in cognitive development** but not necessarily into the mental deficiency range.
- **Specific learning disorders at school age**, with better performance in reading and language, poorer ability in mathematics.
- **Mild mental retardation** - (IQ<70). Borderline intelligence - 70 to 85.
- **Attachment disorders** which may include indiscriminate attachment or failure to attach due to grossly pathological care.
- **Sleeping problems** such as trouble going to sleep and short sporadic periods of restless sleep.
- **Judgment problems** often recognized as failure to learn from experience or to develop a logical approach to problems.



Typical Child



Alcohol Affected Child



- **Unusual facial features** that include short palpebral fissures, thin upper lip, flattened philtrum, lowset ears, and flattened midface.
- **Low birthweight and continued small size** until puberty, when catch-up growth is common.
- **Damage to the nervous system** such as decreased cranial size at birth, structural brain abnormalities, and neurological hard or soft signs.

# FASt Facts FASt Facts FASt Facts

## Comprehensive Assessment

- **Diagnosis** must be made by a **Dysmorphologist**.
- **Medical status** to document head circumference, height, weight, etc. as well as to address associated minor medical problems.
- **Neurodevelopmental assessment** to include IQ, achievement, visual-motor, attention, adaptive behavior, and social-emotional development.
- **Family evaluation** by social worker to assess need for community support and referrals to outside agencies.
- **Educational assessment** to insure most appropriate and least restrictive educational placement.
- **OT/PT/Speech** to address commonly associated deficits in fine motor, gross motor, and expressive language development.
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## Focused Treatment

- **Identify problems** based on comprehensive assessment.
- **Recommend specific treatments** to include medical, psychological, and educational interventions.
- **Coordinate efforts** to insure continuity of care as well as to maximize chances for successful outcomes.

## Where to Turn

### Diagnosis:

The Marcus Institute  
FAS Clinical Team  
1920 Briarcliff Road  
Atlanta, GA 30329  
(404) 419-4256



### Resources

### Bibliography:

- Stratton, K., Howe, C. & Battaglia, F., Eds. Fetal Alcohol Syndrome: Diagnosis, Epidemiology, Prevention, and Treatment. Report of the Institute of Medicine Committee to Study Fetal Alcohol Syndrome. National Academy Press: Washington, D.C., 1996.
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