

# Children: The Real Victims of Meth Exposure

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## **Key Points to Diagnosing and Treating Drug Exposed Infants and Children**

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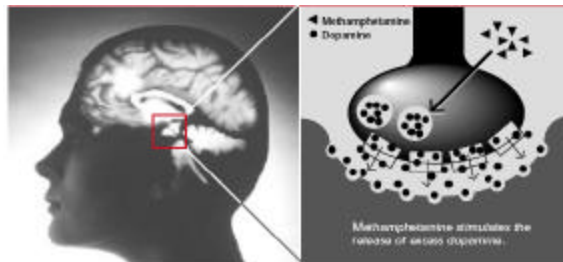
- Symptoms exhibited by infants/children exposed to drugs or alcohol may vary.
- Some of the symptoms that drug-exposed infants and children exhibit are not “exclusive” to drug exposed infants/children and may be seen in non-exposed infants and children. Therefore, it is difficult to diagnose an infant or child as drug exposed based only on the symptoms. A detailed history of drug/alcohol use during pregnancy is key to the diagnosis.
- Treatment is based on the symptoms that the infant/child may be exhibiting, not solely on the fact that the child is drug exposed.
- The drug exposed infant may be at risk for problems later in life, such as speech delay, attention deficit hyperactivity disorder and behavioral problems that may not be clinically present until the child is over age two or even school age.
- Not all infants/children exposed to drugs will have problems. The effects of drugs on infants/children will depend upon the amount of drug used during pregnancy and how long the drug was used during the pregnancy.
- The risk posed from drug exposure before birth should be balanced against the protective effects of a stable environment and early intervention services.

## Methamphetamine and Cocaine

Both methamphetamine and cocaine are psychostimulants that result in increased dopamine release. Dopamine is a neurotransmitter present in regions of the brain that regulate movement, emotion, motivation and feelings of pleasure. Excessive dopamine is responsible for the euphoric feelings experienced by the user. Although both are psychostimulants, there are differences in transmission at the level of the nerve cell.

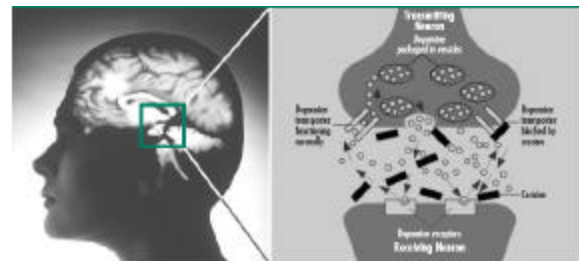
### Methamphetamine

In the brain, dopamine plays an important role in the regulation of pleasure. In addition to other regions, dopamine is manufactured in nerve cells within the ventral tegmental area and is released in the nucleus accumbens and the frontal cortex.



### Cocaine

Cocaine in the brain – In the normal communication process, dopamine is released by a neuron into the synapse, where it can bind with dopamine receptors on neighboring neurons. Normally dopamine is then recycled back into the transmitting neuron by a specialized protein called the dopamine transporter. If cocaine is present, it attaches to the dopamine transporter and blocks the normal recycling process, resulting in a build-up of dopamine in the synapse which contributes to the pleasurable effects of cocaine.



Information and illustrations from the National Institute on Drug Abuse (NIDA) website:  
<http://www.nida.nih.gov>

## **Public Health Concerns from Methamphetamine Abuse Epidemic**

### Maternal and Child Health

- LACK of prenatal care
- Nutritional neglect
- Increased risk of preterm births
- Increased incidence of complications in pregnancy
  - High BP, Placental Abruption, C-Section Births, Fetal Death, Small Size Baby
- Unplanned pregnancy
- Drug exposed infants and children with special needs

### Communicable Disease Incidence

- Increased incidence of hepatitis
- Rise in Syphilis, Tuberculosis, other STDs
- Perinatal transmission of AIDS to children

### Environmental Health

- Risk of toxic chemical contamination to household members and professionals
- Risk of increased lead exposure to households where meth labs are found
- Fire hazard due to combustible chemicals in meth labs

### Community Health

- Increase in crime and firearm use
- Loss of economic productivity
- Disruption of family unit
- Increase in juvenile crime
- Increase in emergency room cases from accident, trauma, and criminal assault
- Increase in prostitution, gambling, and car theft

### Child Abuse/Domestic Abuse

- Increase in child abuse reporting
- Increase in out-of-home placement for children
- Increase in domestic abuse cases
- Child abandonment

## **Common Symptoms in Infants who were Perinatally Exposed to Drugs**

Diagnosis: Hypertonicity (increased muscle tone)

Possible Causes: Overdrive of the brain's response for muscle action

Expected Course: Birth until age 12 months or longer

Possible Treatments:

1. Passive Range of Motion (ROM) exercises
2. Infant Massage (handout)
3. May require referral to therapy services
4. Avoid walkers at any age. Exersaucers and jumpers when tone has stabilized and OK'd with physician, then use these items for limited amounts of time.

Diagnosis: Tremors of arms and/or legs (shaking)

Possible Causes: Overdrive of the brain's response to muscle action

Expected Course: Birth until 12 months or longer

Possible Treatments:

1. Minimize overstimulation
2. Stress reduction
3. May refer to OT/PT

Diagnosis: Irritability/excessive crying

Possible Causes: Poorly organized brain response to external stimuli

Expected Course: May be present at birth and may last until age 12 months

Possible Treatments:

1. Avoid overstimulation
2. Provide a consistent stable environment
3. Swaddle in blanket
4. Offer pacifier

Diagnosis: Poor self regulation of feeding (infant wanting to eat all the time)

Possible Causes: Poorly organized brain function

Expected Course: 0 to 4 months of age

Possible Treatments:

1. Talk with pediatrician to determine optimal caloric needs of infant
2. Offer bottled water between feedings
3. Offer pacifier for nonnutritive suck

Diagnosis: Poor self regulation of feeding (difficult to get infant to feed)

Possible Causes: Infant is too sleepy or tuned out and does not wake for feedings, takes too long to feed or infant has poor suck/swallow coordination.  
Poor sensory integration.

Expected Course: 0 to 4 months

Possible Treatments:

1. Discuss optimal caloric needs with physician

2. May need to wake child every four hours to assure child is meeting caloric guidelines
3. May need to try different nipples on the bottle until find one that works for the infant
4. May need a referral to therapy services for a feeding evaluation

Diagnosis: Poor self regulation of sleep/wake cycle (infant sleeps “all the time”)

Possible Causes: Poor brain regulation

Expected Course: 0 to 6 months

Possible Treatments: 1. Minimize overstimulation  
2. Establish sleep time routines

Diagnosis: Trunkal muscle weakness

Possible Causes: 1. CNS injury  
2. Positional effect from back to sleep position

Expected Course: Varied

Possible Treatments: 1. Encourage supervised play on tummy  
2. Supportive positioning (handout)  
3. May refer to OT/PT

Diagnosis: Various medical complications such as:

1. Neurological complications such as stroke or seizure
2. Infectious diseases such as Hepatitis A, B, C, or HIV

Possible Causes: 1. Insult to CNS

2. Perinatal exposure to infectious agent

Expected Course: Varies with proper medical intervention

Possible Treatments: 1. Proper medical intervention and therapies  
2. Use of universal precautions on all children in foster care, respite care and daycare

## **Possible Symptoms in Toddlers and Preschool Age Children who were Perinatally Exposed to Drugs**

Diagnosis: Speech problems (speech may be unclear for age or child may not be using the number of words appropriate for age)

Possible Causes: Toxic effects on brain centers for speech

Expected Course: Varied

Possible Treatments: 1. May refer for a speech and hearing evaluation when indicated

2. Encourage interactive reading at home
3. Encourage child to use words before honoring his/her request
4. Encourage sign language communication early on

Diagnosis: Temper tantrums/aggressive behavior

Possible Causes: 1. Normal toddler behavior

2. Poor communication in speech delayed children
3. Direct response to stress in the environment
4. Toxic effects of perinatal drug exposure

Expected Course: Varies

Possible Treatments: 1. Teach sign language for expression of feelings (i.e., I'm mad, I'm sad)

2. Redirect behavior
3. Use positive, non-punitive reinforcement
4. Reframe the behavior as a mode of expression

Diagnosis: Sensory integration issues (aversion to cuddling, touching, issues around new clothes, shoes, bath time, new environments)

Possible Causes: Poor development of sensory brain function

Expected Course: Varies

Possible Treatments: 1. May refer for sensory integration evaluation and treatment through OT

2. Avoid triggers for sensory defensiveness

## Potential Symptoms in School Age Children who were Perinatally Exposed to Drugs

Diagnosis: Attention Deficit Hyperactivity Disorder

Possible Causes: 1. Direct result of drugs on brain function  
2. Environmental factors

Expected Course: Varies

Possible Treatments: 1. AAP Recommendations for ADHD:

- a. Medical treatment combined with behavioral therapy is the most effective
- b. Efficacy of medical treatment in drug exposed children has not been studied. Therefore each individual case needs to be evaluated regarding benefits versus risks of medication.
- c. Medication alone is not a recommended treatment for ADHD.
- d. Behavior treatment recommended by the AAP includes:
  - i. Managing undesirable behaviors by positive reinforcement
  - ii. Better communication between school and home
  - iii. Special classroom management for behavior modification
  - iv. Summer and Saturday programs

Diagnosis: Social Maladjustment

Possible Causes: 1. Sensory integration problems  
2. Developmental disorders (i.e., PPD, Autism)  
3. Secondary to environmental deprivation  
4. Direct toxic effect of drugs such as alcohol

Expected Course: Varies

Possible Treatments: 1. Individual and group therapy  
2. Neuropsychological evaluation, looking at the relationship between brain function and behavior  
3. Assessment for underlying psychiatric disorders  
4. Environmental interventions to improve environment  
5. Sensory integration therapy

Diagnosis: Academic failure

Possible Causes: 1. Intellectual delay  
2. Learning Disability

Expected Course: Varies

Possible Treatments: 1. Same as for social maladjustment  
2. Classroom modification

## Key Points to Treatment Plans for Drug Exposed Infants and Children

Consistency in routine is vital, especially if the child is going on visitations with parents. Parents need to be aware of the best way to interact with the child/infant to decrease stress response.

Teach parents and caregivers that the stress response may not be due to rejection or poor attachment but rather a coping response to loss and grief.

*Medical necessity of daycare for drug exposed infant/child.* There is no medical benefit per say for drug exposed infants/children, i.e. ***inclusion in daycare does not cure the effects of perinatal drug exposure.*** Therapeutic daycare may be recommended if at the appropriate developmental stage a child needs interaction with same age peers to help develop speech and language skills or personal/social behaviors. Protective daycare and daycare for special needs children is recommended based on individual needs of the child.

If daycare is recommended, the daycare should meet the following guidelines (which are prudent guidelines for any parent considering daycare for his/her child):

1. The daycare center or in-home daycare is licensed
2. A smoke free environment is provided
3. A good infection control policy is in place
4. A supportive environment that is not overstimulating or understimulating is provided
5. Consistency in care provider is available, keeping the number of providers to a minimum

## **Sudden Infant Death Syndrome (SIDS)**

Research suggests that there is an increased risk of SIDS from environmental exposure from second hand smoke. There is no parallel research available for perinatal or environmental cocaine or meth exposure. Recommendations for SIDS prevention should be observed with perinatally drug exposed infants, as well as any infant in the home.

The recommendations for preventing SIDS include:

1. Having the infant sleep on his/her back
2. Avoid overheating
3. Avoid exposure to second hand smoke
4. Infant's mattress should be firm and do not put pillows or stuffed toys in the crib

The recommendations for SIDS prevention "override" the treatment plan. For example, if swaddling the baby be sure the baby is not "overdressed" and at risk of overheating. If encouraging "tummy play" to strengthen trunk muscles, supervise at all times, do not leave the young infant unsupervised on their tummy.

## The Crystal Clear Facts

### Key Statistics:

- The cost of meth to Minnesota taxpayers in 2004 was \$130 million.
- 58% of counties nationwide say that meth is the leading drug-related local law enforcement problem in the country, according to the National Association of Counties (NACo) survey of 500 counties.
- Meth use is growing among many populations, including students.
- Half of the drug crimes in Ramsey County are methamphetamine related.
- In 2005, violent crime is up 13% in Ramsey County, an increase law enforcement officials attribute to meth.
- Every pound of meth manufactured yields 5 to 7 pounds of toxic waste.
- Approximately 1/3 of all children in foster care are there, at least in part, because of a parent's meth addiction.

### Meth:

- Meth is a highly addictive central nervous system stimulant.
- 80% of meth in Minnesota is imported from "super labs" located in Mexico and the Southwestern U.S. – approximately 20% is manufacture in small clandestine labs within the state.
- Common slang terms are: Meth, Crystal, Glass, Ice, Crank.
- Meth causes an intense rush causing the brain to release high levels of dopamine, resulting in high energy and a feeling of euphoria lasting up to 12 hours.
- Side effects include convulsions, fevers, strokes, heart irregularities, stomach cramps, and shaking.