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“Parents who are addicted to drugs have a primary commitment to chemicals, not to their children.”

Beckwith, 1989
What is Methamphetamine?

- A very powerful and addictive stimulant
- A derivative of amphetamines
- First introduced in the U.S. by biker gangs, later became mainstream and make-your-own
- Has many attractive features that draws in first-time users
- Comes in a variety of forms including powder, crystal, and a prescription version (desoxyn)
Methamphetamine
Methamphetamine Home Labs

Calendar Year 2014
Total: 9,206

Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment

Source: DEA/Intelligence Center (IPEC)/National Seizures System (NSS)

U.S. Drug Enforcement Administration
The Outward Effects
Meth Bugs

Picking for bugs under your skin isn’t normal. But on meth it is.
Meth Mouth
How Does Meth Impact Brain Function in Adults?

- Immediately begins to change brain chemistry
- Damages neurons more severely in ways that other drugs do not
- Not all areas of the brain affected: centers for reward, memory, and judgment are most heavily impacted
- Profound changes in dopamine and serotonin systems
- PET scans resemble Parkinson’s patients
- Brain chemistry resembles paranoid schizophrenics
- In children, integration of sensory-based functions is most vulnerable
Affected Areas of the Brain

- Depression
- Delusions & Hallucinations
- Obsessive Behavior
- Uncontrollable Movement
- Learning
- High
- Tolerance
- Paranoia
- Judgment
- Memory
- Aggression
- Addiction
Brain Impact

Normal Control

Methamphetamine Abuser
(1 month abstinent)

Methamphetamine Abuser
(14 months abstinent)
Brain damage from meth use

**Normal:** Three-dimensional model from a scan of a non-user's brain. Image shows normal brain activity in all areas.

**Frequent use:** Scan from the brain of a 36-year-old user who had been abusing meth for 10 years. The holes show lack of brain activity, indicating possible damaged cells.

**Heavy use:** Scan of the brain of a 28-year-old user who had been using meth heavily for eight years. There are more holes than the frequent user's brain.
How Does Meth Hurt Children?
Double Jeopardy for Children

- Children are at risk due to [prenatal exposure](#) and [postnatal environmental effects](#)
  - Poverty
  - Chaotic and dangerous lifestyles
  - Symptoms of psychopathology (personality disorders, depressive symptoms)
  - History of sexual abuse
  - Domestic violence
  - Developmental delays
Developmental Vulnerabilities

- Immature organ systems, faster metabolic rates, weaker immune systems
- Eat more food, drink more fluids, and breathe more air per pound of body weight
- Typical behaviors expose them to more hazards
- Increased potential for cerebral damage (strokes, brain lesions)
- Maternal depression leads to a higher incidence of behavioral issues
Digestive Difficulties

- Permanent brain damage causes difficulty in glucose metabolism (12-17 mo. to repair some)
- Stomach lining is weakened by high levels of acidity, leading to gastritis
- H pylori bacterial infection ensues
- Symptoms may include an aversion to food, acid reflux-like symptoms, abdominal cramps, ulcer-like symptoms
Treatment for H pylori

- No safe protocol documented for children

- For adults a three-pronged approach:
  - Amoxicillin or other antibiotic
  - Bismuth (i.e., Pepto: some risk of Reye syndrome)
  - Metronidazole (i.e., Pepcid)

Hypersensitive to taste and smell: go for bland
Lactose intolerance: try soy-based or lactose-free products
The IDEAL Study

- Infant Development, Environment and Lifestyle Study
- Brown University, Dr. Barry Lester, began in 2002
- Longitudinal study of 408 children who experienced prenatal exposure to meth into school to age 7
- Data collection in Iowa, Oklahoma, California, and Hawaii (and New Zealand, n=240)
The IDEAL Study Process

- Examination of:
  - Neurobehavior at birth, 1 month, 12 months, 24 months, and 36 months
  - Comparison of exposed vs. non-exposed infants
  - Neural network development related to executive functioning: motivation, attention, memory, inhibitory control, visual motor integration, and motor control memory.
IDEAL Study

Clinical outcomes:
- smaller head size
- evidence of feeding difficulties
- sleep disturbances
- delays in development domains
- ADD
- early and multiple interventions produce positive outcomes (healthcare, mental health, social services)
Pre-Natal Meth Exposure

- Easily crosses the placenta
- Constricts blood flow, restricting oxygen and slowing growth
- Linked to a greater incidence of multiple births, prematurity, and low birth-weight, brain lesions
- Meth moms are less likely to seek help than other addicted women
- A clean 3rd trimester reduces fetal involvement significantly
Risk Concerns for Infants

- **Withdrawal**: vomiting, watery stools, fever, sleeplessness, tremors, poor feeding, high-pitched cry, seizures, lethargy, intolerance to light or touch, general irritability

- **Special needs**: cardiac defects, sleep apnea, visual or hearing handicaps, seizure disorders, neurological disorders/delays, gastroschisis, club foot
Congenital Effects

Club Foot

Gastroschisis
Minimizing Infant Stress

- quiet, calm environment with minimal noise & bright lights
- Ensure warmth and comfort by bundling
- Encourage habituation by providing sucking opportunity with a pacifier
- Initiate gentle rocking or soothing motions to help achieve neurobehavioral organization
- Limit exposure to odors and touch
Young Children up to 2+ Years

- 6-18 months of age is referred to as a “honeymoon” period of development for drug-exposed children.
- All external measures may well indicate the child is symptom-free.
- Toward the end of this period (18-24 months), speech and language difficulties may appear.
Interventions: Infants and Toddlers

- Design quiet environments; limited sensory stimulation
- Implementation of an emotionally centered, attachment focused program (Circle of Security; Promoting First Relationships)
- Consistency in schedule, adult contacts, physical stimulation
- Use of sign language
- Referrals for sensory integration therapy; sensory screening
Children 3+ Years

- Attention deficit may become more pronounced; anxiety
- Social-emotional regulation may become more challenging
- Problems adjusting to a changing environment
- Spatial learning and memory (object recognition) are deficient
- Tendencies toward aggressive behavior, hypervigilance, and parentification
- Type II diabetes and high blood pressure are common
- Unstable family units exacerbate problems
Common Psychosocial Problems

- Low self-esteem
- Core boundary issues
- Regressive behaviors
- Fear and anxiety
- Food and object hoarding
- Grief and loss behaviors
- Influence of family disruption
  - Initiative (guilt): Preschool
  - Industry (inferiority): School age
Guiding Principles for Parenting

- Develop a team of helping professionals
- Develop a support system
- Avoid negative stereotypes
- Respect the child’s privacy
- Establish predictable routines
- Find acceptable ways to initiate affection
- Advocate for medical/educational needs
- Help the child be successful with something
- Maintain a realistic yet positive attitude; develop a tolerance for the unknown
- Take care of yourself!
References

- The Brown Center for the Study of Children At Risk, brown.edu/Departments/Children_at_Risk/prenatal%20Substance.htm
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