WELCOME TO THE CRACKS IN THE ICE WEBINAR SERIES
Effects of Ice use during Pregnancy on both the Mother and Baby

Dr Mark Greenhalgh

27/3/2019
Overview

1. How are pregnant women affected by methamphetamines?
2. What risks does prenatal methamphetamine use place on the newborn?
3. What are some management strategies for mother and baby
4. Q&A
Methamphetamines
Methamphetamines

Figure 7: Form of methamphetamine or amphetamine recently used, NSW, 2010 to 2016
# Methamphetamine use

## Table 2.1: Recent drug use, people aged 14 or older, 2001–2016 (%)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Tobacco</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker*</td>
<td>23.2</td>
<td>20.7</td>
<td>19.4</td>
<td>18.1</td>
<td>15.8</td>
<td>14.9</td>
</tr>
<tr>
<td>Daily smoker</td>
<td>19.4</td>
<td>17.5</td>
<td>16.6</td>
<td>15.1</td>
<td>12.8</td>
<td>12.2</td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent use(1)</td>
<td>82.4</td>
<td>83.6</td>
<td>82.9</td>
<td>80.5</td>
<td>78.2</td>
<td>77.5</td>
</tr>
<tr>
<td>Risk of lifetime harm(2)</td>
<td>20.5</td>
<td>20.8</td>
<td>20.7</td>
<td>20.5</td>
<td>18.2</td>
<td>17.1#</td>
</tr>
<tr>
<td>Monthly risk of single occasion harm(3)</td>
<td>29.2</td>
<td>29.5</td>
<td>29.3</td>
<td>29.0</td>
<td>26.4</td>
<td>25.5</td>
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<tr>
<td>Monthly risk of single occasion harm and risk of lifetime harm(4)</td>
<td>n.a.</td>
<td>n.a.</td>
<td>17.7</td>
<td>15.6</td>
<td>14.7#</td>
<td></td>
</tr>
<tr>
<td><strong>Illicit drugs (excluding pharmaceuticals)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marijuana/cannabis</td>
<td>12.9</td>
<td>11.3</td>
<td>9.1</td>
<td>10.3</td>
<td>10.2</td>
<td>10.4</td>
</tr>
<tr>
<td>Ecstasy(5)</td>
<td>2.9</td>
<td>3.4</td>
<td>3.5</td>
<td>3</td>
<td>2.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Meth/amphetamine (speed)(6)</td>
<td>3.4</td>
<td>3.2</td>
<td>2.3</td>
<td>2.1</td>
<td>2.1</td>
<td>1.4#</td>
</tr>
<tr>
<td>Cocaine</td>
<td>1.3</td>
<td>1.0</td>
<td>1.6</td>
<td>2.1</td>
<td>2.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>1.1</td>
<td>0.7</td>
<td>0.6</td>
<td>1.4</td>
<td>1.3</td>
<td>1.0#</td>
</tr>
<tr>
<td>Inhalants</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.6</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Heroin</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Ketamine</td>
<td>n.a.</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>GHB</td>
<td>n.a.</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Synthetic cannabinoids</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>1.2</td>
<td>0.3#</td>
</tr>
<tr>
<td>New and emerging psychoactive substances</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>0.4</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Injected drugs</td>
<td>0.6</td>
<td>0.4</td>
<td>0.5</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Any illicit(7) excluding pharmaceuticals</td>
<td>14.2</td>
<td>12.6</td>
<td>10.9</td>
<td>12.0</td>
<td>12.0</td>
<td>12.6</td>
</tr>
</tbody>
</table>

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National Drug Strategy Household Survey 2016 (AIHW)
# Meth/amphetamines

## For people aged 14 or older in Australia in 2016

- **6.3%** (or 1.3 million) used meth/amphetamines in their lifetime
- **1.4%** (or 280,000) used meth/amphetamines in the last 12 months
- **2.8%** of people in their 20s had recently used meth/amphetamines
- **5.5%** had the opportunity to use meth/amphetamines in the previous 12 months.

## Among recent meth/amphetamine users aged 14 or older in 2016

- **20%** used meth/amphetamines at least weekly
- **62%** had used crystal/ice in the previous 12 months
- **11.9%** injected meth/amphetamines in the previous 12 months
- **34 years** was the average age of recent meth/amphetamine users.

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National Drug Strategy Household Survey 2016 (AIHW)
Table 6: Other select drugs used by people who used methamphetamine in the last 12 months, 2015

<table>
<thead>
<tr>
<th>Substance used</th>
<th>NDSHS</th>
<th>DUMA</th>
<th>NPHDC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Cannabis/marijuana</td>
<td>264,000</td>
<td>72</td>
<td>785</td>
</tr>
<tr>
<td>Heroin</td>
<td>8,000</td>
<td>*2.3</td>
<td>197</td>
</tr>
<tr>
<td>Ecstasy</td>
<td>42,000</td>
<td>55</td>
<td>262</td>
</tr>
<tr>
<td>Cocaine</td>
<td>201,000</td>
<td>40</td>
<td>237</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>149,000</td>
<td>25</td>
<td>158</td>
</tr>
<tr>
<td>Inhalants</td>
<td>90,000</td>
<td>13</td>
<td>42</td>
</tr>
<tr>
<td>Steroids</td>
<td>48,000</td>
<td>*3.2</td>
<td>56</td>
</tr>
<tr>
<td>Total</td>
<td>368,000</td>
<td>100</td>
<td>1,121</td>
</tr>
</tbody>
</table>

* Estimate has a relative standard error of 25% to 50% and should be used with caution

Note: Columns will not sum to total because more than one drug type may have been used

Sources: AIHW 2014, AIC DUMA collection 2013–14 [computer file], AIHW 2015a
Ice use in Pregnancy

Methamphetamine Abuse and Treatment During Pregnancy

Maternal methamphetamine use may endanger the health of the mother and be associated with a possible increase of birth defects.
The Centre for Substance Abuse, Research’s Infant Development, Environment and Lifestyle (IDEAL) study reported that: **5.2% of women** used methamphetamine at some point during their pregnancy.
Figure 8.13: Drug-taking behaviours before and after knowledge of pregnancy, pregnant women aged 14–49, 2016 (%)
Conclusions. Increasing incidence of amphetamine and opioid use among delivering women and associated adverse gestational outcomes indicate that amphetamine and opioid use affecting birth represent worsening public health crises. (Am J Public Health.)
One Hit Of Crystal Meth Causes Birth Defects, Affects Fetuses At All Stages Of Development

Date: July 27, 2005
Source: University of Toronto

Summary: A single prenatal dose of methamphetamine -- commonly known as speed -- may be enough to cause long-term neurodevelopmental problems in babies, say University of Toronto researchers.
Webinar Poll
A woman presents at 29 weeks for her first antenatal appointment with an unplanned pregnancy. She has a 18 month old who was removed at birth in view of active drug use. She has hepatitis C. She discloses a recent lapse with use of crystal methamphetamines which she injected following a fight with her partner.

What is your gut feeling around what will happen after this baby is born?
Stigma of ice users

PERCEPTIONS AND POLICY SUPPORT

Community perceptions of drugs

Between 2013 and 2016, people’s perceptions of meth/amphetamines changed considerably.

More people:
- associated it with a drug problem
  - 2013: 22%
  - 2016: 46%
- thought it caused the most deaths
  - 2013: 8.7%
  - 2016: 19%
- drug of most concern to the community
  - 2013: 16%
  - 2016: 40%

Excessive alcohol use no longer drug of most concern (declined from 42% in 2013 to 28% in 2016).

Alcohol remained the drug most commonly identified as causing the most deaths in 2016 (35%).

Fewer people thought tobacco caused the most deaths.

32% 2013

24% 2016
Meth Babies on the Rise: Long-Term Effects of Moms on Meth During Pregnancy

The term “meth babies” has become one that we hear all-too-commonly, as more and more babies in the U.S. are born addicted to drugs. One of the reasons more babies are born addicted to drugs is because of the opioid epidemic the country is facing, but opioids aren’t the only culprit.

According to the New England Journal of Medicine in a 2015 report, the number of babies in America born addicted to drugs quadrupled since 2004. There are studies showing that many of these increases are surprisingly seen among people with higher incomes who are insured, and there’s also research showing it’s taking longer to wean newborns off the drugs they’re born addicted to.

According to the same report, every 25 minutes a newborn is born and going through extreme withdrawal symptoms. In 2013, 27 per every 1000 new babies were born addicted to narcotics.
Crack Baby Syndrome

The crack baby syndrome occurs when the mother is regularly smoking crack while pregnant. Smoking crack cocaine while pregnant can have dire effects on a child. Children born under the influence of the substance are known as crack babies. Crack babies are often born with several issues.
Figure 3: Frequency of methamphetamine use by recent users, Australia, 2007 to 2016.

Proportion of recent users

Year of survey

- Once a week or more
- About once a month
- Every few months
- Once or twice a year

Cycle of Addiction:
- Relapse
- Dependence
- Withdrawal
- Addiction
- Quitting
Prenatal Methamphetamine Exposure: Maternal effects

- Less antenatal care
- Lower weight
- Poor nutrition
- Intercurrent infections (hep C)
- Miscarriage/ stillbirth
- Polydrug use
- Social concerns
Maternal effects: Increased complications

<table>
<thead>
<tr>
<th>Variables</th>
<th>Amphetamine Use (n = 18,050)</th>
<th>Opioid Use (n = 50,011)</th>
<th>Other Hospital Deliveries (n = 7,545,380)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal diagnoses, weighted % (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>9.3 (8.2, 10.4)</td>
<td>4.4 (4.0, 4.9)</td>
<td>4.8 (4.7, 4.8)</td>
</tr>
<tr>
<td>Placental abruption</td>
<td>4.3 (3.6, 5.0)</td>
<td>3.1 (2.8, 3.5)</td>
<td>1.0 (1.0, 1.1)</td>
</tr>
<tr>
<td>Clinical outcomes, weighted % (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preterm delivery (&lt;37 wk)</td>
<td>16.7 (15.3, 18.0)</td>
<td>12.6 (11.9, 13.4)</td>
<td>5.8 (5.7, 5.9)</td>
</tr>
<tr>
<td>Cesarean delivery</td>
<td>37.4 (35.6, 39.3)</td>
<td>34.5 (33.5, 35.6)</td>
<td>32.6 (32.3, 32.8)</td>
</tr>
<tr>
<td>Severe maternal morbidity or mortality</td>
<td>3.8 (3.1, 4.4)</td>
<td>2.4 (2.1, 2.7)</td>
<td>1.6 (1.6, 1.7)</td>
</tr>
</tbody>
</table>

RANZCOG guidelines
Substance use in pregnancy

The following specialised modules of care may be undertaken as appropriate or concurrently:

1. Treatment of withdrawal, including pharmacotherapy if appropriate.
2. Provision of information about substance use, and encouragement to participate in decisions about care.
3. Involvement of the partner, family, the extended family and community according to the woman’s preference and available supports.
4. Medical, mental health, psychosocial, pregnancy, and drug and alcohol management, and care of co-morbidities.
5. Pre-birth child protection notification to be made if appropriate.
6. Links to community or Indigenous health, mental health, drug and alcohol support services, midwifery and or neonatal nursing services, outreach services, general practitioner or Flying Doctor services should be established and maintained.
7. Pre-birth liaison with paediatric colleagues to provide early counselling for parents of possible outcomes for baby.
8. Management of Neonatal Abstinence Syndrome is provided if this occurs.
9. Information, counselling and support are provided to minimise the incidence of relapse.
10. Appropriate follow-up arrangements are made for both mother and baby.
Amphetamine withdrawal management

Withdrawal syndrome

The initial phase (crash) of withdrawal syndrome occurs as the stimulant effects wear off. Symptoms include:

- prolonged sleeping
- depressed mood (although some irritability even in the initial phase)
- overeating
- some cravings (not usually severe in this initial phase).

The initial phase may last one to two days and then is followed by a longer period of several days to weeks of:

- mood changeability (irritability, depression, inability to experience pleasure)
- cravings
- disturbed sleep
- lethargy.

Psychotic symptoms may emerge during the first one to two weeks, particularly if they were present during times of use.
Antenatal Maternal Management

- Multi-disciplinary CBT
- Supportive
- Counselling
- +/- meds (benzo’s, SSRI’s, anti-psychotics)

- Child Protection
- Ongoing till delivery and beyond
Prenatal Methamphetamine Exposure: Perinatal outcomes

Table 2. Perinatal Outcomes

<table>
<thead>
<tr>
<th>Perinatal Characteristics</th>
<th>Methamphetamine Users (n=273)</th>
<th>Control Patients (n=34,055)</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preterm delivery</td>
<td>139 (52)</td>
<td>5,627 (17)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>1-min Apgar score less than 4</td>
<td>16 (6)</td>
<td>665 (2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>5-min Apgar score less than 7</td>
<td>16 (6)</td>
<td>328 (1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Cesarean delivery</td>
<td>79 (29)</td>
<td>7,730 (23)</td>
<td>&lt;.02</td>
</tr>
<tr>
<td>Neonatal mortality</td>
<td>11 (4)</td>
<td>325 (1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Maternal obstetric + intensive care unit admissions</td>
<td>6 (2)</td>
<td>95 (0.3)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Data are n (%) unless otherwise specified. 
* P from χ² test.
Prenatal Methamphetamine Exposure: Effects on the baby

Table 2
Birth Outcomes of MA-exposed pregnancies compared with non-MA exposed pregnancies

<table>
<thead>
<tr>
<th>Outcome</th>
<th>All women (n=251)</th>
<th>Women with no other drug use (n=119)</th>
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<tbody>
<tr>
<td></td>
<td>All MA use</td>
<td>No MA use</td>
</tr>
<tr>
<td></td>
<td>during pregnancy</td>
<td>during pregnancy</td>
</tr>
<tr>
<td>Gestational age (weeks)</td>
<td>38.5 ± 2.0</td>
<td>39.1 ± 2.1</td>
</tr>
<tr>
<td>Birth Weight (grams)</td>
<td>3159 ± 561</td>
<td>3168 ± 533</td>
</tr>
<tr>
<td>Head Circumference (cm)</td>
<td>33.5 ± 3.2</td>
<td>33.9 ± 2.9</td>
</tr>
<tr>
<td>Length (cm)</td>
<td>50.3 ± 3.0</td>
<td>50.6 ± 3.4</td>
</tr>
<tr>
<td>Cord pH</td>
<td>7.25 ± 0.1</td>
<td>7.27 ± 0.1</td>
</tr>
<tr>
<td>Maternal LOS (days)</td>
<td>2.7 ± 1.3</td>
<td>2.4 ± 1.2</td>
</tr>
<tr>
<td>Infant LOS (days)</td>
<td>3.9 ± 7.0</td>
<td>3.5 ± 4.7</td>
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<tr>
<td>First prenatal visit (weeks)</td>
<td>23.3 ± 9.5</td>
<td>17.7 ± 9.5</td>
</tr>
<tr>
<td>Number of prenatal visits</td>
<td>7 ± 4.3</td>
<td>8.4 ± 3.9</td>
</tr>
</tbody>
</table>

Wright et al., (2015) Methamphetamines and pregnancy outcomes
Journal of Addiction Medicine
Birth defects:
- Cardiac
- Cleft lip
- Cerebral abnormalities
Acute withdrawal

- Neonatal abstinence
- Recent maternal use
- Unsettled, high pitched cry, poor attachment, poor feeding, loose stools
- Finnegans
- Eat/sleep/console
Family Centered Care

- Less breast feeding
- Higher rates of child protection involvement
- Higher rates of assumption of care

Management of baby

- Aim to keep mother + baby together
- Breast feeding (negative urines/ well engaged/ rehab)
- Intensive midwifery support
- Single room/ 5 day stay
- Monitoring for withdrawal
- Head ultrasound
Keeping mum and baby together

- Multi-disciplinary support
- Mother baby unit
- Support and encouragement
Increased long term risks:

- Physical
- Learning and cognitive effects
- Behavioural
- Emotional
- Smaller brain volume on MRI
- Correlation with poorer attention and delayed memory
Emotionally Reactive
Anxious/Depressed
Withdrawn
Sleep Problems
Aggressive
Somatic Complaints

Behavioral and Emotional Control at 5 years-old

Prenatal Methamphetamine Exposure

Executive Function Deficits at 6.5 years-old

Attention/Concentration Index
Delayed Recognition Index
General Memory Index
Long Delay (Free)
Short Delay (Cued)
Accuracy Score

Site Difference: Iowa vs. California

Abar et al., 2013 Examining the Relationships Between Prenatal Methamphetamine Exposure, Early Adversity, and Child Neurobehavioral Disinhibition. *Psychology and Addiction Behaviour*
Summary- Effects of ice use during pregnancy on both the mother and baby

- Amphetamine use in pregnancy continues to occur
- Stigma around this patient group can affect the provision/acceptance of best practice care
- Prenatal methamphetamine exposure can:
  - harm the mother and unborn baby
  - Cause long term consequences to the infants development
- These families need support, follow up and strategies to encourage change
Addiction and Pregnancy: A Guide for Mothers

Pregnancy should be an exciting and empowering time in a woman’s life. Unfortunately, addiction and mental health problems can compromise a woman’s safety and well-being. There’s hope for recovery, though. Help is available for pregnant women who are suffering from addiction.
Download the app today

Search for “Cracks in the Ice” and download for FREE

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