Myths and Facts about Drugs (a short list)

JENNIFER J. CARROLL
OCTOBER 30, 2023
Topics covered today

1. What is naloxone? What does it do, and what does it not do?
2. Can you overdose by touching fentanyl?
3. What is rainbow fentanyl, and is it targeting kids?
4. What's the deal with fentanyl in marijuana? Is that a thing?
5. Does handing out safe use supplies like smoking equipment or fentanyl test strips encourage drug use?
6. What impact do stricter drug laws and/or drug policing have on public health?
7. What are the real risks of substance use during pregnancy?
These Are Important Questions

HIV vaccine raised infection risk

Published: 17 October 2013

Sara Reardon

Nature (2013) | Cite this article

Researchers are not sure why a vaccine to prevent HIV infection increased the rate at which recipients contracted the virus (shown here in red attacking a blood cell). Credit: NIBSC/SCIENCE PHOTO LIBRARY
These Are Important Questions


The Adolescent Substance Abuse Prevention Study: A randomized field trial of a universal substance abuse prevention program.

Sloboda Z1, Stephens RC, Stephens PC, Grey SF, Teasdale B, Hawthorne RD, Williams J, Marquette JF.

**Author information**

1 Institute for Health and Social Policy, The University of Akron, 225 S. Main Street, Suite 520, Akron, OH 44325-1915, United States. zsloboda@aol.com

**RESULTS:** Main effect analyses show a negative program effect for use of alcohol and cigarettes and no effect for marijuana use. Subgroup analyses indicated that the negative effect occurred among nonusers at baseline, and mostly among white students of both genders. A positive program effect was found for students who used marijuana at baseline. Two complementary papers explore the relationship of the targeted program mediators to the use of alcohol, tobacco, and marijuana and specifically for students who were substance-free or who used substances at baseline.
What can naloxone do and not do?

**Opioids:** Heroin, Fentanyl, Oxycodone, Hydrocodone

**Not opioids:** Cocaine, Xylazine, Gabapentin, Xanax / alprazolam

**Opioid characteristics:** Receptor activation; Binding affinity

**Main characteristic determining the amount of naloxone needed:** The number of opioid receptors in the body
Approximate wholesale cost of naloxone products:

- Other nasal: ~$45-60
- Market rate injectable: ~$8 ($3.80 - $12)
- Our negotiated costs: Less than $4
- Dominant brand: ~$47.50-$60

The dominant branded nasal spray is 1166% more expensive than our highest priced offering.
Can you overdose by touching fentanyl?

Dermal exposure risk for fentanyl and fentanyl analogs

Fentanyl is amenable to transdermal absorption because of its low molecular weight and lipophilicity [19,20]. Depending on the specific product, transdermal delivery systems (“patches”) take 3–13 h to produce a therapeutic serum fentanyl concentration and 35 h to reach peak concentration [21–24]. Absorption of liquid or

However, incidental dermal absorption is unlikely to cause opioid toxicity. If bilateral palmar surfaces were covered with fentanyl patches, it would take ~14 min to receive 100 mcg of fentanyl (using a body surface area of 17,000 cm², palm surface area of 0.5% [26], and fentanyl absorption of 2.5 mcg/cm²/h [24]). This extreme example illustrates that even a high dose of fentanyl prepared for transdermal administration cannot rapidly deliver a high dose.
Can you overdose by touching fentanyl?
Can you overdose by touching fentanyl?
Can you overdose by touching fentanyl?

- Zero cases of alleged fentanyl toxicity from incidental contact have been toxicologically confirmed.
- Symptoms most commonly described align with panic attacks, not opioid toxicity.
- In most cases, affected persons are still conscious and breathing at the time of their emergency.

Mounties dial back warnings about dangers of fentanyl exposure for police

RCMP 'created a little bit of a monster,' says force's national drug program coordinator

Catharine Tunney · CBC News · Posted: Feb 12, 2019 4:00 AM EST | Last Updated: February 12, 2019
What is Rainbow Fentanyl?

- **Shock value labels** are developed by law enforcement, media, laboratory staff. They do not reflect how drugs are perceived, discussed, or represented among the people who use them.
- "Smoking" (vaporizing) fentanyl pills is now the most common route of administration in many parts of the U.S. This method of use **lowers** the risk of infection and overdose.
- **Colored additives differentiate the supply**. The point is to be overtly clear that these are not real pills. Supply differentiation is key to reducing overdose risk.

DEA Warns of Brightly-Colored Fentanyl Used to Target Young Americans
Is Fentanyl-Laced Marijuana a Real Thing?

Connecticut falsely linked nearly 40 overdoses to fentanyl-laced marijuana, report finds

FOR IMMEDIATE RELEASE: Nov. 18, 2021
CONTACT: Chris Boyle, Director of Communications
(860) 706-9654 – christopher.boyle@ct.gov

Officials From The Connecticut Overdose Response Strategy And The Department Of Public Health Issue Warning About The Possible Dangers Of Marijuana With Fentanyl
Is Fentanyl-Laced Marijuana a Real Thing?

(U//DSEN) In 2021, numerous drug poisoning events reportedly involving fentanyl-laced marijuana occurred around the United States. Despite this reporting, few cases were found to substantiate the concern that marijuana samples were being laced with fentanyl. Fentanyl is an opioid analgesic and marijuana contains the hallucinogen delta-9-tetrahydrocannabinol, which would make them an unlikely drug combination due to their disparate effects. Whether fentanyl contained within a marijuana cigarette would be vaporized at all, or if the fentanyl would be decomposed at typical smoking temperatures, is a question that had not been significantly explored.
Do Smoking Equipment or Fentanyl Test Strips Encourage Drug Use?

1. 125 PWUD in Greensboro. (+) FTS result prior to use resulted in 5x higher odds of using less, using slowly, taking a test hit, or sniffing (not injecting).
2. 93 PWUD in Rhode Island. 68% of those with (+) FTS result used slower, used less, or didn’t use.
3. 1141 drug checking events in Vancouver, BC. 48% of those with (+) FTS result used less or not at all.
4. 103 PWID in Delaware. 69% of those with (+) FTS result used buddy system, used slower or less.
5. 103 sex workers in Baltimore. 69% of those with (+) FTS result used buddy system, used slower or less AND significant reductions in injection frequency and daily opioid use were observed in FTS group.
Do Smoking Equipment or Fentanyl Test Strips Encourage Drug Use?
What Impact Do Stricter Drug Laws Have on Public Health?
What Impact Do Stricter Drug Laws Have on Public Health?

Enhanced sentencing laws deter people from calling 911 during an overdose emergency.

Deterrence only documented among the extremely vulnerable.

Limited data suggests little deterrence on higher-level suppliers.

High-profile cases can disrupt local drug markets.

What Impact Do Stricter Drug Laws Have on Public Health?

Policy analysis

Drug induced homicide laws may worsen opioid related harms: An example from rural North Carolina

Jennifer J. Carroll, Bayla Ostrach, Loftin Wilson, Jesse Lee Dunlap, Reid Getty, Jesse Bennett

Appalachian region of western North Carolina. Describing insights gained from two unrelated but overlapping studies carried out in Haywood County, we identify several plausible mechanisms through which DIH laws may negatively impact public health. Among these are disruptions to the local drug market and deterrence from calling 911 when witnessing an overdose.
What Impact Do Stricter Drug Laws Have on Public Health?

Spatiotemporal Analysis Exploring the Effect of Law Enforcement Drug Market Disruptions on Overdose, Indianapolis, Indiana, 2020–2021

Bradley Ray, PhD, Steven J. Korzeniewski, PhD, George Mohler, PhD, Jennifer J. Carroll, PhD, MPH, Brandon del Pozo, PhD, Grant Victor, PhD, Philip Huyhn, MPH, and Bethany J. Hedden, MSW

In this issue of AJPH, Ray et al. (p. xxx) explored whether overdose increased or decreased in proximity to drug arrests in Indianapolis, Indiana. They found that within a six-minute walk (500 m) of each drug arrest, opioid overdose deaths doubled. Elevated fatal and nonfatal opioid overdoses were sustained over one, two, and three weeks.
What are the real risks of substance use during pregnancy?
More than 1 in 10 pregnant people aged 18-44 report past year cannabis use. Rates of use are higher among those with severe morning sickness.

Smoking cannabis during pregnancy is linked to lower gestational birth weight (about 3oz).

According to the National Academy of Sciences, the relationship between cannabis use during pregnancy and any other pregnancy, birth, or childhood outcomes is unclear.

About 12% of pregnant people are living with **depression**; about 15% with **anxiety** disorders. Pregnancy can worsen **bipolar** symptoms.

All medication decisions need to be made **with a clinician** and must weigh known risks of untreated mental illness against the potential (unknown) risk from medications to the fetus.

Psych/Mental health medications

**SSRIs:** Possibly associated with increased risk of low birth weight. Some SSRIs are associated with lower APGAR scores, but the **clinical relevance of that difference is unclear.** Many outcomes associated with parental depressive symptoms **regardless of medication status.**

**Antiepileptics:** Massively understudied. Possible association with neural tube defects but unclear if this is due to medication or underlying conditions the meds treat.

Psych/Mental health medications

**Lithium:** Massively understudied. Taper is recommended but expected parental and infant outcomes are unclear.

**Antipsychotics:** Thorazine, Haldol, Trilafon have no known significant effects. Seroquel, Risperdal, Zyprexa, Clorzaril carry some risk of low birth weight, miscarriage. No long-term studies on childhood outcomes exist.
Benzodiazepines

Among the commercially insured, about 2% of pregnant people are prescribed benzodiazepines (note difference from anxiety diagnosis)

Lots of animal studies indicating association with cleft palate and encephalopathy.

Known associations in human include only **short term effects**: feeding difficulty, hypotonia
## ACOG Guidelines on Psychiatric Medication Use During Pregnancy and Lactation


### Safety of Psychiatric Medications During Pregnancy and Lactation

<table>
<thead>
<tr>
<th>Drug</th>
<th>FDA Pregnancy Category*</th>
<th>AAP Rating</th>
<th>Lactation Risk Category†</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anxiolytics and hypnotics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alprazolam (Xanax)</td>
<td>D</td>
<td>Unknown, of concern</td>
<td>L3</td>
</tr>
<tr>
<td>Chlordiazepoxide (Librium)</td>
<td>D</td>
<td>NA</td>
<td>L3</td>
</tr>
<tr>
<td>Clonazepam (Klonopin)</td>
<td>D</td>
<td>NA</td>
<td>L3</td>
</tr>
</tbody>
</table>

*FDA Pregnancy Category: (A) no risk, (B) risk unknown, (C) possible risk, (D) risk established, (X) contraindicated.

†Lactation Risk Category: (L1) safe, (L2) moderate, (L3) risk, (L4) contraindicated.
Stimulants

Cocaine

Most common association is low birth weight and pre-term delivery (before 37th week).

No known long-term effects for child.

All existing studies that identify such long-term consequences are confounded by poverty, school support, parental support, health care access etc.


Stimulants

Amphetamines

Large study of >1,000,000 pregnancies found rate of congenital malformation of 35/1000 in those not exposed to amphetamines, 45/1000 in pregnancies that were exposed to amphetamines, no association with cardiac malformation.

Stimulants

**Methamphetamine**

Associated with low birth weight.

No known associations with cognitive or language development.

Possible transient effects on gross motor development.

Most clinically relevant risk is cardiac health of the gestational parent.

Alcohol

Among the riskiest substances to consume during pregnancy.

The message is always “no amount alcohol is safe at any time during pregnancy.”

Studies that have looked at medical records identified 1-2 FASD births out of every 1000 births. Screenings in school settings identify closer to 6-9 births out of every 1000 births.

As with cocaine, most studies are confounded by poverty, institutional abandonment, lack of social resources, etc.

https://www.cdc.gov/ncbddd/fasd/data.html
Opioids

No well-designed, long-term, peer-reviewed scientific studies have consistently found long-term negative health or cognitive effects of opioid use or use of medications for opioid use disorder by the gestational parent, during pregnancy.
Medications for opioid use disorder (methadone, buprenorphine, and naltrexone) are the ONLY evidence-based treatments for opioid use disorder.

ONLY opioid agonist medications (methadone and buprenorphine) have been found to be safe for use during pregnancy. **These are the gold standard treatments for opioid use disorder during pregnancy.**

Quitting “cold turkey” is associated with placental abruption. Medically-supervised detox is associated with high relapse rates and increased overdose risk when medications are not continued.

Dose of methadone and buprenorphine do not predict severity of NOWS symptoms.

With proper care (Eat Sleep Console), NOWS related hospital stays are reduced from >3 weeks to <1 week and the proportion of newborns receiving medication support is reduced from 98% to 14%.

There are no long-term impacts on the child. Short term impacts on the child are largely determined by the quality and kind of care they receive in hospital.


Opioids during pregnancy:


Drug Myths Have Real (Non-Mythical) Effects
Opioids and Neonatal Withdrawal
When reporting on pregnancy, babies, and substance use

**LANGUAGE MATTERS**

I am not an addict.
I was exposed to substances in utero. I am not addicted. Addiction is a set of behaviors associated with having a Substance Use Disorder (SUD).

I was exposed to opioids.
While I was in the womb we shared a blood supply. I was exposed to the medications and substances they used. I may have become physiologically dependent on some of those substances.

NOW is a temporary and treatable condition.
There are evidence-based pharmacological and non-pharmaceutical treatments for Neonatal Opioid Withdrawal Syndrome.

---

My parent may have a SUD.
They might be receiving Medication-Assisted Treatment (MAT). My withdrawal symptoms may be a side effect of their appropriate medical care. It is not evidence of abuse or mistreatment.

My potential is limitless.
I am so much more than my diagnosis. My drug exposure will not determine my long-term outcomes. But how you treat me will. When you invest in my family's health and wellbeing by supporting Medicaid and Early Childhood Education you can expect that I will do as well as any of my peers!
PREGNANCY AND SUBSTANCE USE

A HARM REDUCTION TOOLKIT

EL EMBARAZO Y EL CONSUMO DE SUSTANCIAS

UNA CAJA DE HERRAMIENTAS PARA LA REDUCCIÓN DE DAÑOS

NATIONAL HARM REDUCTION COALITION

Academy of Perinatal Harm Reduction
Thank you

jjcarro3@ncsu.edu

(all errors in this presentation are entirely mine)